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The flexibility gamble: challenges for mainstreaming flexible approaches to climate change adaptation

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ABSTRACT

Adaptive and flexible approaches based on implementing different measures as new information emerges have been proposed as a way of enabling robustness towards uncertain future climate change. However, the success of flexible approaches in practice depends on the stability of the relevant organizational landscapes. In this paper, we draw upon key insights from the institutional theories of organizations and research on public administration and climate adaptation in Sweden. We argue that potential organizational instabilities pose a substantial challenge for the mainstreaming of flexible approaches to climate adaptation. Given the unstable character of the relevant organizational landscape in a very stable country such as Sweden, it seems reasonable to also seriously doubt the capacity of the relevant authorities in less stable countries to carry out a great number of monitoring-intensive, and hence attention-demanding, adaptive governance processes over time. Based on our results we argue that it is perilous to simply assume that flexible approaches to climate adaptation will lead to greater robustness.

KEYWORDS

Climate change adaptation; adaptive governance; flexibility; implementation; robustness; institutional organization theory

1. Introduction

An emerging body of work in climate change adaptation (CCA) governance is based on an understanding of the problem as characterized by *deep uncertainty* due to the near-impossibility of forecasting local effects of global climatic change (Hallegatte, 2009; Hallegatte et al., 2012; Marchau et al., 2019a; Ranger et al., 2013; Walker et al., 2013a; Wilby & Dessai, 2010). Deep uncertainty is a challenge to long-term infrastructural investments in, for example, urban development, considering that many such structures are supposed to be functional for up to a century, and will thus need to cope with climate conditions that may be radically different from the current ones (Hallegatte et al., 2012). Ranger et al. (2013) argue that if this uncertainty is not managed appropriately, infrastructure may need to be prematurely replaced or expensively retrofitted. A key question is, therefore, how to plan for the climate change adaptability of such investments (Hallegatte, 2009). Methods aiming for *robustness* have been proposed as a means for responding to these challenges (see e.g. Hallegatte et al., 2012; Lempert & Schlesinger, 2000; Walker et al., 2013a; Wilby & Dessai, 2010). Robustness-focused methodologies strive for decisions that ‘minimize regret’ by producing acceptable outcomes over a wide range of possible futures (Ranger et al., 2013; Walker et al., 2013a; Wilby & Dessai, 2010).

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Robustness can be achieved in different ways. Walker et al. (2013b) distinguish between *static robustness*, which is defined as a policy that will perform reasonably well in practically all conceivable situations and *adaptive robustness* which instead implies provisional policy decisions which one is prepared to revise as a consequence of changing conditions. In the existing literature on the subject, robustness is typically associated with adaptive or flexible approaches. In this paper, we use the term *flexible approaches*, which we define as any policy consisting of multiple strategies or pathways that can be implemented or revised over time as more information about uncertain future developments becomes available. One reason for the popularity of flexible approaches might be that static robustness is often prohibitively costly or impossible in situations of very large uncertainty. For example, static options that can handle 2–3 meters of sea level rise by year 2100 – e.g. by building a very high seawall or relocation of a community – are in many cases not only costly but also politically contentious. Flexible approaches depend upon, and typically take for granted, the reliability of critical implementation and monitoring mechanisms over time. However, when such governance mechanisms are deployed within organizational landscapes that are less than perfectly stable it may be called into doubt whether such assumptions are indeed reasonable. These challenges are further exacerbated if the number of flexible solutions that need to be ‘carried’ and monitored are multiplied, for instance through the ‘mainstreaming’ of flexible approaches to CCA governance, as has been proposed in recent interventions in the debate (Gersonius et al., 2016; Ranger et al., 2013; Wall et al., 2015; Zevenbergen et al., 2018).

The question we ask in this paper is: what is the potential for successfully mainstreaming flexible approaches to CCA in organizational landscapes of a less-than-perfectly stable character? The answers will by necessity be of a partially speculative character considering that most such solutions, even those already implemented, have not been in function for very long and have only been scantily evaluated (Bosomworth & Gaillard, 2019; Jones et al., 2014; Lin et al., 2017; Wise et al., 2014). In line with the suggestion provided by Marchau et al. (2019b), we have therefore focused on an examination of the character of the organizational landscape in which such solutions unfold. We provide a critical discussion of the capacity of such an organizational configuration to carry a multiplicity of flexible solutions over time.

The goal of this paper is to contribute to the emerging critical literature on adaptive governance methodologies for CCA (to which we count e.g. Bosomworth et al., 2017; Lin et al., 2017; Van der Brugge & Roosjen, 2015; Wise et al., 2014; Zandvoort et al., 2018) by focusing attention on the formidable demands relating to implementation and monitoring that are associated with the potential mainstreaming of flexible approaches to CCA. We believe that robustness-based approaches are essential for managing many of the climate-related challenges faced by contemporary societies, and that flexible approaches are promising and worthwhile to further develop in the ambition to achieve a higher degree of overall robustness for CCA interventions. Our purpose is thus not to discredit flexible approaches but rather to assist in the identification of critical weaknesses so that such lacunae may be constructively addressed.

The main thrust of the argumentation of this paper is theoretical and methodological, but the argumentation is grounded on a broad foundation of empirical research, which is utilized as a critical case with regard to institutional capacity. We suggest that the fundamental governance challenges that can be observed in the comparatively well-functioning Swedish system can be expected to be a source of trouble also in less stable governance settings. Put more bluntly: if ‘even in Sweden’ there seems to be reason to seriously doubt the capacity of relevant public authorities to carry a great number of monitoring-intensive and hence attention-demanding flexible plans over time, the situation can be expected to be even more daunting in less organizationally structured and more resource-scarce public administration contexts.

The remainder of the paper is structured as follows: Section 2 contains a background on adaptive robustness and flexible approaches to CCA; Section 3 discusses key insights on policy implementation from institutional organization theory. Section 4 presents the material and methods which the argumentation in the paper builds upon. Section 5 presents and analyses the research results. The sixth and final section wraps the paper up with a discussion arguing for the importance of not simply assuming that more

flexible approaches to climate change adaptation can, by definition, also be expected to be those that are most robust.

2. Adaptive robustness and flexible approaches to climate change adaptation governance

2.1. Robustness and adaptive policymaking

Some of the earliest work on robustness as a decision-making criterion can be found in Gupta and Rosenhead (1968). The idea of robust decision-making strategies has increasingly been proposed for managing the 'severe' or 'deep' uncertainties in long-term CCA (Lempert & Schlesinger, 2000; Marchau et al., 2019a). Wilby and Dessai (2010) suggest that an adaptation plan is considered robust if it performs adequately across a broad range of plausible climate, population and investment scenarios. However, the detailed understanding of the term 'robustness' in this literature is somewhat muddled and different definitions have been proposed (Giuliani & Castelletti, 2016). Generally, the invocation of decision robustness appears to signify that a decision can hold under different assumptions or can be shown to withstand variable outcomes of assumed key factors that are currently unknown or even assumed to be presently unknowable – such as the extent of sea level rise over the coming century, or local changes in precipitation over a similar timespan. In the literature a difference can be discerned between a stress on flexibility (e.g. in the work of Rosenhead and associates), and on the performance across a broad range of possible futures, whether flexible or not (e.g. in the work of Lempert and associates). However, the relevance of this differentiation is to some extent limited, seeing that the latter authors also tend to stress the importance of adaptiveness to achieve robustness, as in Lempert et al. (2003) where it is argued that '[i]n practice, robust strategies are often adaptive; that is, they evolve over time in response to new information', and the main strategy to achieve robustness is suggested to be 'with *adaptivity*' (Lempert et al., 2003, italics in original; see also e.g. Lempert & Kalra, 2011).

Political scientists Voß and Bornemann (2011) suggest that adaptive governance in general terms is an emerging paradigm of governance that has the ambition to take into account ambivalence, uncertainty, and distributed power in societal change while aiming for reflexivity regarding the limits of prognostic knowledge and actual control of complex processes of change. It tends to prominently feature strategies of collective experimentation and learning. Walker et al. (2001) explicitly bring together adaptive policymaking with ideas about decision robustness in relation to CCA. In a further development of this work Walker et al. (2013a) suggest that the guiding principles for the design of a sustainable adaptive plan are to explore a wide variety of 'relevant uncertainties', to connect short-term targets to long-term goals, to commit to short-term actions while keeping options open and to continuously 'monitor the world and take actions if necessary'. Relating to the above, Kwakkel et al. (2016a) specify that adaptivity is achieved through a signpost and trigger system, where a strategy is modified in a pre-specified way in response to a pre-specified trigger.

In CCA governance, particularly relating to water resource management, the adaptive approach has been developed into adaptation pathways (Haasnoot et al., 2012) and dynamic-adaptive planning (Walker et al., 2013a) methodologies, which were later synthesized into the dynamic-adaptive policy pathways approach (DAPP) (e.g. Haasnoot et al., 2013). Within this methodology literature Robust Decision-Making (RDM) and DAPP are considered to be complementary, where the function of RDM is that of providing insights into vulnerabilities and conditions for problems to occur, whereas DAPP – through facilitating dynamic adaptation over time – provides a framework and methodology for how to handle and produce policy responses towards those uncertain vulnerabilities (Kwakkel et al., 2016b).

Within the DAPP approach, a plan is conceptualized as a set of multiple, parallel series of potential actions over time (pathways). At pre-determined trigger points the course can be changed so as to counter emerging conditions and complications. The planning processes thus combine the formulation of short-term actions, long-term options and the triggering conditions that require a shift between different 'pathways' so as to achieve a set of pre-conceived goals. Fundamental to the functioning of the methodology is

the recurrent reassessment of the viability of the current plan and the monitoring of signals that indicate when the next step of a pathway should be implemented or whether the plan to some extent needs to be revised (Lawrence & Haasnoot, 2017).

Dynamic-adaptive methodologies for the planning and governance of CCA measures have primarily been developed and employed in large-scale and high-profile infrastructure projects, such as the protection of land and fresh-water resources in the Netherlands or the Thames Barrier Project in the UK (Ranger et al., 2013). Lawrence and Haasnoot (2017) note that these projects have generally been at a national scale with relatively clear objectives and ready access to resources, cautioning that the applicability of the methods in other contexts are yet to be fully explored. Nonetheless, there have been recent repeated calls for the ‘mainstreaming’ of dynamic-adaptive methodologies in CCA governance, also in relation to more routine spatial development projects, so as to secure their functioning in view of potential adverse effects of climate change (see e.g. Gersonius et al., 2016; Ranger et al., 2013; Wall et al., 2015; Zevenbergen et al., 2018). In view of such an ambition, Carstens et al. (2019) nonetheless caution that adaptive methodologies for deciding upon CCA measures can be perceived also as complex, difficult and resource-demanding, which may be less of a problem for mega-projects but more of a concern for smaller, ‘run-of-the-mill’ spatial development projects.

2.2. Flexible approaches to achieve robustness

Walker et al. (2013a) suggest that there are at least four overlapping ways to deal with deep uncertainty in CCA governance: resistance (plan for the worst-case scenario), resilience (if disrupted, ensure quick system recovery), static robustness (reduce vulnerability over largest range of possible futures) and dynamic robustness or ‘flexibility’ (plan to change over time to respond to changing conditions). In concrete terms, if we take the example of protection from sea level rise, for example, for a built environment, a resistance approach would be to – no matter the cost – plan to ensure that the area could continue functioning even in a worst-case scenario, which in this regard could amount to a sea level rise of around 10 meters by the year 2200 (Sweet et al., 2017). A resilience scenario would focus on the functionality of the area, even if it is flooded – but could be difficult to sustain if over time it becomes, say, permanently immersed under the sea surface. A static robust solution could be to consider as widely as possible the ‘space’ or ‘map’ of potential possible futures and make a decision how much is reasonable already to invest in flood prevention measures now, and to design such measures so as to ensure that the area can withstand as large as possible sea level rise, given the limitations. Finally, a dynamic-robust or flexible approach would for instance be to implement a lower level of flooding measures at the time of construction, but to ensure that these can be retrofitted in various ways so as to respond to unpredicted increases in the sea level in a less costly way than if such preparations had not been made. The exact pace of sea level rise is then vigilantly monitored and when reaching certain ‘trigger points’, the designated organizations will alert decision makers to the need to invest in more extensive protective measures (see further e.g. Ranger et al., 2013; Walker et al., 2001).

As previously also noted by Van der Brugge and Roosjen (2015) and Carlsson Kanyama, Wikman-Svahn, et al. (2019) a clear preference for flexibility can be discerned in the literature on robustness-focused approaches to CCA. The assumption that flexible strategies are preferable has become a received wisdom and unquestioned assumption in the literature on adaptive CCA governance to such an extent that Borgomeo et al. (2018) label it ‘an essential principle for water management under uncertainty’.

2.3. Implementation and monitoring of flexible approaches

As discussed above, the vigilant monitoring of ‘trigger points’ is fundamental to the functioning of adaptive, flexibility-favoring methodologies – and the implementation phase lasts as long as such monitoring is deemed necessary, which may indeed be indefinitely in the case of plans that relate to epochal processes such as climate change. Consequently, Bloemen et al. (2019) even go as far as suggesting that ‘[a] well-functioning monitoring and evaluation (M&E) system is the *conditio sine qua non* for the implementation of an

adaptive strategy'. But even though the existing literature on adaptive methodologies for CCA recurrently stresses the importance of the implementation phase, it nonetheless rarely delves into the details of how these long-enduring processes are to be effectively organized and maintained. For instance, Ranger et al. (2013) state that in the implementation phase the relevant actions are to 'implement plans' and 'evaluate, monitor and review', recognizing that 'critical to its success is the implementation of an ongoing monitoring system'.

Haasnoot et al. (2013) state that in the monitoring phase,

time starts running, signpost information related to the triggers is collected, and actions are started, altered, stopped, or expanded in response to this information. After implementation of the initial actions, activation of other actions is suspended until a trigger event occurs.

Who is to be responsible for this ongoing, potentially endless attention-intensive work and how it is to be organized is, however, not specified. The importance and challenges of arranging proper and functional long-term monitoring systems are highlighted in Hermans et al. (2017), Haasnoot et al. (2018) and elsewhere. However, these studies mainly focus on the challenges of monitoring signposts and triggers of actions and the agency to perform those actions within a relatively well-defined organizational framework which itself is assumed to be generally stable and reliable.

In another example, Walker et al. (2013a) suggest that in implementation '[p]lanners, through monitoring and corrective actions, keep the system headed toward the original goals' and that '[o]nce the basic dynamic adaptive plan is established, the plan is implemented, and monitoring commences'. Similarly to the other examples, the last statement is formulated assertively, as something that simply happens if one decides upon this at an early stage in the process. However, very little is said in this literature regarding *who* is actually to fulfill these quite heavy and temporally far-reaching obligations. It appears to be simply assumed that the policy process will be carried into the future by an unspecified group of 'planners' and that there will be an adequate and agile monitoring organization in place at the future point in time, perhaps 50 or 100 years from now, in which a trigger event may occur.

To summarize the above, methodologies promoting flexible approaches to CCA put a high demand on high quality, vigilant monitoring functions but also appear generally to simply assume the stability of such functions (see also Zandvoort et al., 2018). However, previously documented experience from other types of adaptive environmental governance have evinced that the crucial implementation and monitoring phases pose a serious challenge, or even potential stumbling block, for adaptive environmental governance methodologies, if not properly attended to (see e.g. McLain & Lee, 1996; Moser & Ekstrom, 2010). McLain and Lee (1996) show that in their in-depth case studies of adaptive governance arrangements in natural resource management, monitoring generally turns out to be a main point of controversy and organizational risk that can jeopardize the long-term viability of the arrangements. The lack of attention to the implementation and monitoring activities in the literature is hardly surprising however, considering Jones et al.'s (2014) conclusion that overall most work on CCA governance has focused exclusively on the scoping and analysis phases of such policymaking while interest in implementation and follow-up 'has been minimal'. To get an idea about the general and expectable implementation challenges that can arise in relation to this type of ambitious and resource-intensive policy operations we therefore now turn to the tradition of institutional theories of organizations, which has grappled with this type of problem for a long time.

3. Institutional organization theory

This paper draws upon institutional theories of organizations so as to situate the ambitions and methodologies of flexible approaches to CCA governance within the organizational contexts in which they unfold. Previous research suggests that institutional organizational theory has much to offer for a broadening and deepening of our understanding of the preconditions, including possible potentials and risks, of applying adaptive approaches to CCA governance (Van der Brugge & Roosjen, 2015; Nair & Howlett, 2017). However, the aspects of institutional organizational theory we choose to focus on here – i.e. how organizational flux and

resource scarcity risk weakening the capacity to sustain organizational attention over time – have not previously been explored in relation CCA governance.

3.1. Attention as a scarce resource

Landmark studies from the ‘Carnegie school’ (Cyert & March, 1963; March, 1991; March & Simon, 1958) suggested that attention can be expected to be a scarce resource in organizations. The allocation of attention of decision makers and executives, particularly sustained attention, is always a challenge. To maintain attention to an issue over time must be assumed to constitute a strain on the organization that incurs a cost. This can be challenging, particularly if resources are limited and in situations in which many other issues are also competing for scarce supplies of attention. For instance, in relation to policymaking, Kingdon (1984) observes that, in government agencies, different agendas need to go through the same ‘pipelines’ for processing and consequently share the attention and time of the same group of people, generating a competition between various issues that all call for investments of attention. Sullivan (2010) suggests that even if one is not making a strong assumption about attention scarcity, competition for attention in organizations is a dynamic that any theory of organizations must take into account. Further, in contexts in which the supply of attention is constant, or shrinking, attention can be assumed to, within time, become increasingly scarce and under pressure.

3.2. Planned adaptation and unplanned change

Cohen et al. (1972) argue that public organizations can be expected to, at least at times and in some aspects, function as ‘organized anarchies’, distinguishable by unclear preferences and unstable goals, dynamic and sometimes volatile changes in technologies and means, and fluid participation with regards to who is engaged in decision making and follow-up – making these activities potentially erratic and unpredictable. Relatedly, discussing organizational change, March (1981) suggests that organizations are continually changing, often responsively, but nonetheless ‘change within them cannot ordinarily be arbitrarily controlled. Organizations rarely do exactly what they are told to do’.

Institutional organizational theory further stresses the critical importance of always analyzing the actions of organizations as situated within broader operating environments, here referred to as the ‘organizational landscapes’ (see also Wittneben et al., 2012). Further, the organizational landscapes themselves can be more or less stable or fluid (Powell & DiMaggio, 1991). Instabilities in organizations can be expected to be compounded if unfolding in unstable organizational landscapes. Thus, organizations can be expected to evolve over time – and they evolve in relation to a governance context in the form of a wider organizational landscape. In this landscape responsibilities, issues, resources and mandates can shift back and forth between organizations over time, where some of these at times may be completely dropped and disappear from sight.

3.3. The decoupling of decision and implementation

Baier et al. (1986) argued that the challenge of implementing policy decisions has long since been recognized as endemic to organizations (see further also Crozier, 1964; March & Simon, 1958). They suggest that whenever an agent is used to execute the policy of a principal, control problems arise. Baier et al. further suggest that despite the pervasiveness and effectiveness of bureaucratic organizations, there are ample grounds for doubting that a modern administrative agency will faithfully fulfill any given policy directive. The problem is compounded by the fact that policy makers often ignore, or underestimate considerably, the administrative requirements of a policy. Further, they suggest that difficulties in coordinating the agendas of multiple actors are exacerbated by the way in which political and organizational actors move in and out of the arena in response to various claims on their attention (March & Olsen, 1976; Sproull et al., 1978) and as organizations over time are pressed to meet the inconsistent demands of changing sets of actors.

Baier et al. cite Pressman and Wildavsky (1973) as suggesting that some reasons for the inconstancy of attention are that actors may find their commitments to a policy incompatible with other important

commitments, they may have preferences for other programs, they may be dependent on others who lack the same sense of urgency, they may have differences of opinion on leadership or proper organizational roles, and they may be constrained by legal or procedural questions or demands. Consequently, it is suggested that, over time, the shifting pattern of demands for attention made on an organization tends to make the climate of implementation unstable in many small ways that cumulatively affect the course of events (Kaufman, 1981). In summary, Baier et al. (1986) argue that any ‘simple concept of implementation’, building upon an implicit assumption of clear and stable policy intent, is ‘likely to lead to a fundamental misunderstanding of the policy process and to disappointment with efforts to reform it’ (see also Brunsson, 2007).

In Section 5.3 below we will bring the above presented theoretical insights together with our key empirical results to examine how they may contribute to further clarifying and enhancing our understanding of the contextual conditions under which flexible approaches to CCA governance can be expected to operate.

4. Material and methods

The research in this paper is a reflexive-interpretive analysis (Alvesson & Skoldberg, 2018) based on a case study methodology (Yin, 2014). The case under investigation is the organizational prerequisites of the Swedish governance system to carry a multiplicity of flexible measures for CCA over time, i.e.: to ‘mainstream’ a flexible approach to CCA. Much of the empirical work behind the paper has been focused more specifically on the governance of CCA in response to sea level rise, but due to the generalizability of the type of organizational issues that the paper focuses on, the case findings should nonetheless also be of relevance to other areas of CCA governance.

With regard to the specific type of case study that this research can be categorized as, Sweden is here utilized as a *critical case* according to the definition of Flyvbjerg (2006), of the character ‘[i]f it is valid for this case, it is valid for all (or many) cases’. In this case, Sweden is more specifically utilized as a ‘least likely’ critical case – according to the logic that if these tendencies are evident ‘even in Sweden’ they are expectable to also occur in other countries. The rationale behind treating Sweden as a critical case in this context is the well-established reputation of Sweden as a comparatively highly functional state with an efficient public administration. As an example of this status, the World Bank’s well established *World Governance Indicators*-index has, since its launch in 1996, consistently ranked Sweden in the 95th percentile or above with regards to ‘Government Effectiveness’, which includes indicators such as ‘the quality of the civil service’ and ‘the quality of policy formulation and implementation’ (World Bank, 2019). Thus: if it appears doubtful whether the Swedish governance system will find it unproblematic to mainstream flexible approaches to CCA one can expect that most other national governance structures will experience similar, or worse, organizational strains and challenges in this regard.

The primary research materials utilized in this paper have been generated within the context of the five-year research program (2015–2020) *Robust decisions to manage climate risks in Sweden* (henceforth called ‘ROBUST’) financed by the Swedish Civil Contingencies Agency (MSB) and involving a multi-disciplinary team of researchers from the KTH Royal Institute of Technology, the Swedish Defense Research Agency (FOI), Lund University and the County Administrative Board of Gävleborg.

The research program included one subproject focusing on theory development (Wikman-Svahn, 2016), and four empirical studies. The empirical studies focused on how land-use and infrastructure planning for CCA in relation to sea level rise is currently carried out in Sweden, and how it could potentially be revised to relate more closely to principles of robust decision-making approaches (Wikman-Svahn, 2016). The first empirical study covered how CCA planning for the built environment is currently carried out in Sweden (Carlsson Kanyama, Wikman-Svahn, et al., 2019), the second how a flexible approach, in this case a ‘light’ version of a dynamic-adaptive methodology, could be applied in Swedish municipalities in relation to land-use CCA to sea level rise (Carstens et al., 2019). The third study investigated how municipal civil servants and politicians view climate change-related uncertainties and their impact upon municipal affairs (Wester & Wedebrand, 2019), and the fourth validated findings regarding current obstacles for planning according to the principles for robust decision making (Carlsson Kanyama, Carstens, et al., 2019). Table 1 provides an overview

Table 1. Empirical material collected during the research program *Robust decisions to manage climate risks in Sweden* (ROBUST) drawn upon in this paper.

Aim of study	Type of study	Number of workshops and participants	Number of interviews/respondents	Number of documents studied	References
To understand if, and to what extent, principles of robust decision-making were considered in recent CCA planning in response to sea level rise	Multiple case study, five cases	NA	22 people interviewed	60	Carlsson Kanyama, Wikman-Svahn, et al. (2019)
To examine opportunities and constraints of using an adaptive pathways approach in the planning for sea level rise in municipalities	Multiple experimental case study, three cases	9 workshops in three municipalities, 5–8 municipality officials participating in each workshop	NA	NA	Carstens et al. (2019)
To study how municipal officials and politicians view uncertainties	Survey study	NA	Questionnaire sent to 161 respondents, response rate 47%	NA	Wester and Wedebrand (2019) (in Swedish)
To validate obstacles found in earlier studies and to explore how these obstacles could be mitigated	Validation study	1 workshop with 8 participants	7 people were interviewed	NA	Carlsson Kanyama, Carstens, et al. (2019) (in Swedish)

of the empirical studies performed, the empirical materials collected and provides references to the related research documentation. In addition to the above-mentioned research materials, an additional literature review has been performed specifically for the purpose of this article, which is described below in 5.1.

5. Results and analysis

5.1. Literature review regarding the preconditions for public administration and planning in Sweden

The tendencies towards the decline of the ‘stable state’ (Schön, 1971) and the rise of ‘adhocracy’ (Mintzberg, 1979) have been evident to initiated observers since at least the 1960s. The 1980s witnessed a global wave of neo-liberal public sector reform which extended well into the ensuing three decades. These reforms have been argued to have led to the ‘hollowing-out’ of states as governance structures making them more diffuse and splintered with responsibilities repeatedly shifted between various public, semi-public and private actors (Rhodes, 1994). Much of the debate in political science regarding this process has focused on the question of the central state function’s remaining ‘capacity to govern’ (see e.g. Pierre & Peters, 2000). Regardless of these disagreements, all parties to the debate agree that the administrative structures of most European states have in recent decades undergone a prolonged period of recurrent reorganization. Writing specifically about the organization of the planning system in the UK, Allmendinger (2016) argued that the defining features of the contemporary history of English planning have been instability and change, whence ‘[r]eform has been driven by a ceaseless search for an ideal system, one that reconciles apparently irreconcilable tensions’ (Allmendinger, 2016).

5.1.1. Public sector reform in Sweden

Pierre (2004) suggested that the stability of the overall model of public sector organization in Sweden risks masking the ‘substantive dynamics underneath the surface’. The organizational landscape of Swedish public administration has been described as an environment in which ‘reform has become routine’ (Brunsson, 2009). Sundström (2016) concludes that from the end of 1970s and onwards Sweden has seen increasingly systematic and persistent attempts to comprehensively reform the administration. Brunsson and Sahlin-Andersson

(2000) record that it has been repeatedly suggested that these waves of reforms have brought on a more fragmented state structure. In the field of environmental policy, the proliferation of ‘adhocratic’ structures in recent decades has also been observed to contribute to institutional instabilities that induce uncertainty and make long-term operations challenging (Lundqvist, 2001). Consecutive reforms have not led to different steering systems replacing each other in an orderly or sequential fashion but have instead become ‘stacked on each other’, leading to ever increasing goal complexity (Sundström, 2016).

Jacobsson and Sundström (2016) suggest that a key strategy for government to reshape policy fields and conduct reforms has been to create, dismantle and reorganize the administrative units of the state. Also, the transferal of responsibility between units has been very common. Lundqvist (2001) remarked that such fluidities in governance relations and forms, including sudden shifts in the ‘rules of the game’ lead to situations of confusion and uncertainty among governing bodies such as local authorities regarding what is expected of them and how to prioritize and plan activities. Lundqvist further notes that the growth of ‘adhocratic’ forms of state governance such as special delegations, commissions or units demands that governance actors such as local governments must be prepared to quickly shift focus of attention and efforts so as to ‘jump on the bandwagon’. As central government calls the shots by steering funds and support in accordance with new political agendas which can emerge quite suddenly affected actors are left scrambling to answer up to new demands for responsivity, responsibilities, and efforts.

5.1.2. Climate change adaptation governance of the built environment in Sweden

The responsibility for CCA of the built environment in Sweden is currently split among a number of state actors. However, most central of these are the local governments who are legally invested with a so-called ‘planning monopoly’ but who are nonetheless also required to coordinate with a great number of other governmental and non-governmental actors in a complex interplay. It has been noted that in recent decades the Swedish municipalities have been tasked with an increased number of responsibilities while at the same time suffering a shrinking resource base (Blücher, 2006; Lundqvist, 2001). Consequently, many municipalities currently face financial strains and are struggling to fulfill their duties in several areas, including spatial planning. In relation to CCA it is, according to the law, the responsibility of the municipal local building committee to ensure that the technical performance of, for example, CCA measures stipulated in a legally binding local land-use plan are actually implemented and maintained. Nonetheless, it has been noted that this municipal function in particular has been severely strained in recent years and that many municipalities struggle and fail to fulfill this legal duty. In a recent survey of all Swedish municipalities three-fourths of the municipalities reported insufficient resources to be able to live up to existing monitoring demands related to the built environment (Boverket, 2019). This situation can be defined as endemic, considering that similar results have been reported for at least the past decade (see Boverket, 2010).

5.2. Findings from the ROBUST research program

Throughout our research in the ROBUST program, we repeatedly came across a distinct and recurrent reluctance among urban development and planning professionals with regards to the feasibility of a flexible approach to CCA. Specifically, the professionals interviewed voiced concerns regarding the long-term efficacy of flexible approaches and the related proposed stepwise measures, due to the perceived risks related to how unresolved issues, such as financing, risked being pushed into the future. This reluctance was manifestly the dominant response among the professionals we came into contact with in the project, whether it was in our survey of existing practices, the experimental case study or our validation study. This preference for more static adaptation measures also held sway across different categories of professionals in the public administration, whether technical experts or generalists, and whether active in municipal organizations or central state agencies. Even when actively informed about the merits of a flexible approach, or – in some cases – already holding an opinion that such an approach was *theoretically* superior to more static approaches, respondents and workshop participants in the vast majority of cases tended to opt for static solutions when pushed to make a *practical* choice relating to specific and concrete projects.

These results were a bit surprising in the light of the previous literature on adaptive methodologies, considering that the acceptance of the superiority of a flexible approach appears to be the agreed-upon norm among both researchers and practitioners, as reported in most of this literature (see section 2). An offhand comment by one of our interviewees in the multiple case study (Carlsson Kanyama, Wikman-Svahn et al., 2019), discussing hesitations regarding a real case of flexible CCA measures, however gave us a clue that fears of organizational instability and the risk of monitoring failure may be a potentially important source of qualms ('It is an organizational problem. The Transport Administration may not exist in 30 years', National agency civil servant).

The suspicion that organizational challenges may be a key source of discomfort with flexible approaches and their associated demands was further strengthened in reflections from participants in our experimental case study (Carstens et al., 2019) as well as the validation study (Carlsson Kanyama, Carstens, et al., 2019). In the latter, a discussion group-participant suggested that the fundamental logic of municipal spatial planning is to 'close cases', and that '[t]his [flexible approach] requires that you keep an extreme number of cases open and constantly monitor them. That demands that someone constantly attends to them, and that is extremely resource demanding' (Academic researcher). This requires resources in attention and finances that the workshop participants agreed are today critically lacking among the relevant Swedish authorities, particularly in many smaller Swedish municipalities where it may even be that 'The guy who is responsible for planning also is in charge of taking care of the ski lift' (Planning consultant).

5.3. Findings analyzed in relation to institutional organization theory

5.3.1. Attention as a scarce resource in overburdened authorities

Insights from institutional organization theory suggest that attention can be assumed to be a scarce resource in organizations, particularly when resources in general are strained and the ambit of responsibility of the organization is wide. The review of current CCA governance in Sweden evinced that the bulk of responsibility for CCA of the built environment rests with municipal authorities. These are formally equipped with a 'planning monopoly' within their boundaries but are also required to coordinate their planning actions with other governmental and non-governmental actors. The scope of responsibility of Swedish municipal organizations is extremely wide, and they tend to struggle to fulfill all their duties. As a consequence, one area of responsibility that has been highlighted for a long time as being subject to potentially dangerous neglect in many municipalities is that of surveying and ensuring the technical performance and safety of the built environment, including CCA measures.

A mainstreaming of a flexible approach to CCA would require the vigilant monitoring of a great number of plans to continuously follow up whether these need to be acted upon in relation to new developments in the surrounding world that may motivate a revision of existing plans or the implementation of new measures. As stated by the quoted discussion group-participant in 5.2, this implies keeping an extreme number of planning cases constantly 'open' and attended to, which risks becoming immensely demanding of resources in an organizational environment already struggling with a dearth of attention in relation to existing tasks and responsibilities.

5.3.2. Planned adaptation and unplanned change in Swedish public administration

Institutional organization theory has repeatedly stressed that although organizations can be expected to change over time, this change seldom occurs exactly according to some pre-established plan or design, but rather in an evolutionary manner that cannot be easily controlled. As the wider organizational landscape changes, organizations respond to these developments by voluntarily or by imposition taking on new responsibilities, focusing on new issues and losing or gaining resources and mandates.

The review of public sector reform in Sweden also evinced the fluidity of the Swedish public administration organizational landscape over the past decades. Policy fields have been recurrently reshaped, responsibilities have been shifted between different actors and levels, and administrative units have been merged, dismantled and/or reorganized. This has been documented to produce confusion and uncertainty among, for example,

local authorities regarding what is expected of them and how to prioritize and plan activities. All this, taken together, makes it difficult for those acting within this context to assume the long-term stability of the organizational landscape relating not only to CCA responsibilities but also to the overall structure of the public administration. This can to a large degree explain the reluctance of Swedish public servants to trust the reliability of flexible approaches to CCA, which promote the deferral of key decision until they are absolutely necessary but at the same time require the constant monitoring of developments to pinpoint the exact moment when action nonetheless needs to be taken before it is too late. In light of the instability of the relevant organizational landscape there simply appears to exist a broad distrust with regards to whether any actor or agency can be expected to assume responsibility for this long-term vigilance and monitoring activity over the many decades in which a creeping sea level rise can be expected to occur.

5.3.3. The challenge of implementation over an extended time horizon in an unstable organizational landscape

A general conclusion from institutional organization theory is that there are ample grounds for doubting that any modern administrative agency will faithfully fulfill any given policy directive. The problem is further exacerbated by the tendency of decision-makers to considerably underestimate the organizational and resource demands posed by introduced policies and their implementation. Adding to this are challenges of coordinating the tasks and agendas of multiple actors and shifting demands on the relevant organizational actors over time. Overall, these tendencies together contribute towards producing a climate of implementation that is unstable in many small ways but that cumulatively produces the effect of a highly unstable implementation environment.

As evinced by sections 5.1.1, 5.1.2 and the discussion immediately before, these observations also resonate with recent experiences of Swedish public administration in general, including CCA governance. With this in mind it is perhaps not surprising that the vast majority of the professionals we came in contact with in the ROBUST project displayed a degree of skepticism regarding the potential for successfully mainstreaming flexible approaches to CCA when taking the characteristics of the current relevant organizational landscape into consideration. Collectively, they simply appear to lack trust in that the implementation and monitoring processes that are absolutely crucial for the effective implementation of a flexible approach to CCA will be sufficiently reliable over time within organizational landscapes that in turn cannot be expected to be stable over time. Consequently, in relation to such a critical future issue as protection from sea level rise, they overwhelmingly express a preference for a greater investment today – the effectiveness of which can be ascertained at least with some degree of certainty – in contrast to a monitor-and-adjust flexible approach that risks leading to potentially disastrous consequences if not properly implemented and monitored over the long term.

6. Concluding discussion

The results of our study, although inevitably limited in scope, nonetheless seem to suggest that professionals in Sweden do not trust the steady supply of attention and stability of the organizational landscape that is required for a successful long-term implementation of a flexible approach to CCA of the built environment. Our findings thus focus attention on a potential serious vulnerability, previously largely absent in the flexibility-favoring literature on adaptive methodologies for CCA. More specifically, it appears that if the ambition is to mainstream robustness as a decision-making criterion for CCA measures, there is reason to doubt whether flexible CCA measures by default can be expected to be the most robust, when considering the heavy organizational burden of carrying a great number of monitoring and implementation tasks over extended periods of time.

The existing literature that promotes flexible approaches to CCA rightfully points out that costly preemptive investments in static CCA measures constitute a major gamble with public and/or private finances. However, what we contribute in this context is the insight that the same caveat also applies to the flexible ‘monitor and adjust’ approaches, since these rely on a strong assumption that some actor or agent can be trusted to diligently pursue the task of implementing the adaptive planning procedure and monitoring change over an extended period of time – which may well come to stretch over multiple decades. This is a task that is not only extremely

attention demanding – but which also poses a need for extreme long-term organizational reliability which cannot be generally expected according to established perspectives in institutional organization theory.

Our results thus highlight a potential problem with the strong focus on flexibility in the existing literature on robust decision-making approaches. It is often assumed in this literature that keeping options open by adopting a ‘monitor-and-adjust’ approach provides a superior degree of responsiveness, not only to future changes in knowledge of relevant natural processes and their situated local effects, but also to changes in, for example, cultural preconceptions and values. Moreover, it is sometimes assumed that the maximization of such flexibility will enable the minimization of the risk for regret induced by malinvestment and maladaptation. However, recent suggestions to seek the mainstreaming of flexible approaches to CCA planning, resulting in a multiplicity of attention-consuming processes to be carried over time raises questions about the institutional capabilities of public administrations to shoulder such a burden.

Studied in isolation the reported results from the ROBUST-project as well as from the literature study would appear to support the call from Zandvoort et al. (2018) for a more context-sensitive application and understanding of adaptive methodologies. However, the interpretive framework offered by institutional organizational theory further suggests that we may here also be dealing with a more fundamental set of problems related to any type of resource-demanding, monitoring-intensive policy intervention. If it ‘even in Sweden’ appears to be reasonable to seriously doubt the capacity of the relevant authorities to carry out a great number of monitoring-intensive, and hence attention-demanding, flexible plans over time – the preconditions for doing so in less organizationally structured and even more resource-scarce administrative contexts could be even more daunting. The issue is placed in even starker light when we take into consideration that Sweden is ranked as one of the most well-functioning states in the world and that these relatively weaker governance contexts thus constitute the vast majority across the globe. Attempting to mainstream flexible approaches in countries with weak institutions or higher levels of corruption than in Sweden would seem to only exacerbate the challenges identified in our study.

A reasonable retort to this conclusion is that the above analysis is hampered by a myopic nearsightedness. Just because the relevant authorities are currently underfunded, and that the organizational landscape has been in a state of flux, does not imply that this will also be the situation in the near or distant future. Although this point is certainly valid, it by no means undercuts the basic argument that this paper sets out to make: that even if resources are suddenly infused and the organizational landscape stabilized for a period of time, this may well come to unravel at a later stage, to which the proposed methodologies would then be vulnerable, especially when the implementation and monitoring phases need to be run over multiple decades.

In high-profile projects of critical national magnitude, it can perhaps be assumed (although only at some peril) that agreed-upon plans will be vigilantly monitored and followed. But in complex, fractured multi-level governance contexts the validity of any such strong assumption comes across as more dubious, if not improbable. On the contrary, based on the results presented in this paper, it rather appears quite reasonable to instead assume that the capacity of authorities to carry a multiplicity of adaptive policy processes and related flexible climate change adaptation measures is quite limited, or at least questionable. If such expected organizational instabilities are not taken into account in methods for making robust decisions under uncertainty, this will risk jeopardizing the longer-term fate of these decisions, no matter how robust they are in themselves, in effect canceling out any form of effective long-term robustness.

Organizational instabilities over time present a critical challenge to the efficacy of any adaptive approach. Specifically, considering the results of this study, it is by no means certain that more flexible climate change adaptation is robust, in the sense of the term provided by Lempert – i.e. performing acceptably across the greatest possible number of potential futures. On the contrary, in unstable organizational landscapes flexibility-focused approaches enacting a ‘don’t do today what you can put off until tomorrow’ logic may actually be detrimental to the robustness of climate adaptation measures. There is, therefore, a need for future research to more vigorously investigate and elaborate on when and under what circumstances flexibility can be expected to provide robustness to a CCA plan, while taking scarcity of information and existing and potential organizational instabilities into account. More research is also needed

on how implementors of existing flexible approaches to CCA in different political and administrative contexts have sought to remedy the challenge of organizational instability. Consequently, future research could benefit from decoupling discussions of decision robustness on the one hand and the flexibility of approaches on the other hand – and not simply assuming that flexible approaches to climate change adaptation will also be the most robust.

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