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Fostering a flexible forest: Challenges and strategies in the advisory practice of a deregulated forest management system



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ABSTRACT

In deregulated forest management systems, social norms, knowledge dissemination and communication are pivotal for guiding forest owners' actions. This presents a challenge to national forest agencies charged with the task of translating forest policy into practice. Drawing on interviews with forest consultants employed by the Swedish Forest Agency, this paper discusses the challenges present in everyday advisory practice, how they are dealt with, and possible implications for forest policy. Four main challenges are identified: climate change; the heterogeneity of forest owners; resource constraints and funding cutbacks; and competing and conflicting advice. The analysis finds that the forest consultants have developed the following professional capacities to meet these challenges: articulating uncertainties, advocating risk diversification, and using historical references to handle the long-term risk associated with climate change; contextualizing the advice to meet the needs of a heterogeneous group of forest owners; and organizational decoupling, whereby consultants prioritize advisory activities at the expense of other tasks. The study concludes by discussing the implications of these strategies for the forest consultants and forest policy but also what can be learned from the Swedish experience.

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1. Introduction

Fostering a flexible forest is an ambiguous task. A flexible forest is one that can accommodate future uncertainties, such as climate change and shifting market demands, and creating such forests is a central aim of many forest nations around the world. It also describes a deregulated forest management system that lends considerable discretion and flexibility to the forest owners. Under such circumstances, translating national forest policies into practice becomes challenging. This study explores how a specific group of forest professionals charged with this task – publicly employed forest consultants in Sweden – experience and deal with this challenge.

Historically and today, the Swedish economy depends heavily on forestry. About half of Sweden is covered with productive forest (23 million ha) and in 2014 the forest sector accounted for 11% of the total goods exports, with a gross output of about 22 billion EUR (SFA 2015:294). The sector employs 80,000 people, constituting 2% of the labor force. Governing this economic and environmental resource is an important political task, but it is also a complicated one due the forest ownership structure. About 80% of the productive forest land is privately owned: 50% by small-scale private owners, 25% by private companies/corporations, and 6% by other private owners. This is a rather high proportion of private ownership compared to other countries,

both in Europe and on other continents (McDermott et al., 2010; Pulla et al., 2013). Thus, forest ownership in Sweden has previously been surrounded by strict regulation – including mandatory reforestation, weeding and thinning, etc. However, since the 1994 Forest Act, the Swedish forest management system is characterized by deregulation, the governing principle being “freedom with responsibility.” This does not mean that the state has lowered its ambitions regarding forests, but reflects a general and global reorientation from “government to governance” that is also present in the forest sector. Here, as Humphreys (2009) argues, neoliberal ideology plays a part, but it has also been amalgamated with other discourses within the forest sector – such as sustainable management and conservation – together forming a strong and global discourse of deregulation. In essence, the responsibility for implementing forest policy is being shifted from the state to the private sector (FAO, 2007; Hysing, 2009; Holmgren et al., 2010), and non-state regulatory approaches – such as forest certification – have increased in importance around the world (McDermott et al., 2010). Of course, there are still legal requirements within Swedish forestry (e.g. regarding felling and re-plantation), but the government mainly strives to influence forest owners and forest companies by using information, advice, and recommendations (Appelstrand, 2012). Activities such as weeding and thinning are now optional, and reforestation demands are less strict. Environmental preservation is stressed (and given equal priority with the production goals), but to a large extent depends on the willingness of the forest owners. Swedish forest policy now rests on the assumption that forest owners can be persuaded

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to do more than the law requires. The Swedish Forest Agency (SFA) and its employed forest consultants have a central role to play in achieving this. During 2014, about 30,000 forest owners participated in individual field activities or group activities, and 16,000 participated in face-to-face advisory activities organized by the SFA (SFA 2014: 51). This service is free of charge. Also, the forest consultants meet forest owners in their supervisory role (felling and re-plantation are regulated by the Forest Act) and when delivering commercial services such as courses and plans for felling.

It is not society per se but specific organizations and professionals that handle risks i.e. that understand them and develop strategies for their handling (Boholm et al., 2012). Forest consultants shape forest policy outcomes by interpreting rules and allocating public resources. They can be considered “street-level bureaucrats”: they produce public policy as citizens experience it (Lidskog and Löfmarck, 2015; Lipsky, 2010; Meyers and Vorsanger, 2007). However, in contrast to most other street-level bureaucrats (teachers, police-officers, social workers, etc.) they are also charged with the difficult task of achieving policy goals not clearly backed up by formal regulation. Thus, they make up an important part of the forest policy-making community and exercise a form of political power in their everyday activities. This makes it important to study the qualitative nature of these activities. The research questions are as follows: What are the intrinsic challenges in the everyday advisory practice of forest consultants? What strategies are available for meeting these challenges? What are the possible implications for the forest policy output?

The paper is organized into four parts, the first being this introduction. The second part outlines the methods and materials of the study: an interview study of forest consultants and how they perceive and handle challenges in their advisory activities. The third part presents the results, beginning with the challenges perceived and then moving on to the professional capacities and strategies they have developed in order to manage them. The fourth part discusses the implications of these strategies, both for the professional role of the forest consultants and for the Swedish forest policy. The paper concludes by discussing the implications of these strategies for the forest consultants and forest policy.

2. Methods and materials

The empirical data consists of an interview study of forest consultants employed by the SFA. In Sweden, the forest ownership structure varies geographically, with the southern part of the country consisting mainly of non-industrial private forest owners and the northern part mainly of state-owned or larger privately owned companies or corporations. There are also regional differences in the size and composition of the forest. Therefore, consultants were selected from five geographically dispersed regions as well as from rural and urban areas in order to transcend local and regional conditions and capture more general circumstances related to forest consultancy.

A letter was sent to 59 forest consultants of which 19 agreed to take part in the study, 4 declined, and 36 did not respond at all. Only two out of the nineteen interviewees were female, which reflects the general male dominance in the occupation (cf. Wickman et al., 2013). All were experienced consultants (having worked an average of 22 years at the SFA). All but one had a professional university degree.

The interviews were conducted between October 2014 and January 2015. They were semi-structured with an interview guide that allowed for asking follow-up questions and expanding on themes that arose during the interview. The qualitative interview is a process of meaning-making work, and the respondents are seen as competent to describe their situation and experience (Holstein and Gubrium, 1995). This ascribes a rather active role to the interviewer, allowing her to suggest alternative narrative positions and interpretations during the interview in order to facilitate meaning-making. Such active interviewing requires that a variety of perspectives are tried out in follow-up

questions, and is therefore time consuming. In return it yields a rich body of material with many nuances and details.

The interviews were digitally recorded and transcribed verbatim. A contextualized thematic analysis was conducted (Boyatzis, 1998; Bryman, 2012) using NVivo software for the analysis of qualitative data. The process of thematic coding aimed to reconstruct the qualitative nature of everyday forest consultancy and consisted of three main steps. The transcripts were read line-by-line in order to find various themes. After this open and tentative coding a focused and selective coding was performed, further developing the initial codes that made the most analytical sense in terms of the problem under study (Thornberg and Charmaz, 2014) and were broadly represented in the data. Special attention was paid to thematizing everything that was said about the general working conditions of the consultants, particular challenges, and ways of dealing with them. This resulted in the two main analytical themes “challenges” and “strategies,” their respective sub-themes, and several themes of a more descriptive nature. As a last step, theoretical coding (Glaser, 1978) was applied to the existing themes; i.e. a more deductive approach was used where themes were further developed by relating them to relevant theories.

As in all studies – quantitative or qualitative – valid and reliable results are not necessarily transferable to other contexts than the studied one. This study has a qualitative design, involving more intensive methods of data analysis and therefore smaller samples or fewer cases than in quantitative designs. This methodological choice makes it easier to gain an accurate and deep understanding of complex issues but harder to make empirical generalizations (Kvale, 2007; Marshall, 1996). Still, meaningful research always involves making statements that go beyond a particular case or sample. Even if it is not possible to make statistical generalizations from this study, due to the small and non-representative sample, it is possible to draw more general conclusions about the conditions and challenges of providing advice in contexts similar to the studied one. Thus, we cannot judge the extent to which the described challenges and strategies are felt and applied by all forest consultants in Sweden, but we can state that they exist, make them visible, and provide in-depth knowledge on how they function. Furthermore, this knowledge is also of relevance to other countries whose forest governance system uses advisory practices as steering instruments.

3. Results

The results are divided in two subsections below; we first present the challenges addressed by the forest consultants and then the strategies employed to deal with them.

3.1. Challenges in the practice of forest advisory services

The thematic analysis finds four broad challenges experienced by the consultants in their advisory practice. By “challenges” we mean factors identified by the consultants as making it difficult for them to perform their task (i.e. to give advice that is made use of by the forest owners).

Climate change involves uncertain knowledge and long-term risks. The interviewees feel certain that climate change is taking place, and this is also a central tenet of the SFA and indeed of most national forest agencies around the world; hence forestry is an increasingly central part of the international climate change agenda (FAO, 2011). The uncertain knowledge concerns the specific consequences, rate, and magnitude of climate change, as well as what countermeasures are most effective. An illustrative and basic example of this complex of problems is the (biological) fact that tree species that are optimal for a future changed climate may not grow well today. The consultants' uncertainties about these questions reflect those in the scientific debate on the subject, implying that there is no certainty to be found by reading up on the scientific literature. A related problem is that of divergent planning horizons,

where the risks associated with climate change stretch far into the future, well beyond the planning horizon of most forest owners. They may view climate change as a problem for future generations to deal with, because they are busy managing the forest in the current climate. Also, a standard forest-management plan extends approximately 10 years into the future, which means that this short planning horizon is more or less institutionalized.

Furthermore, even in cases where certainty prevails as to what measures should be taken, and even if the planning horizons are shared, the deregulated Swedish forest management system gives no guarantees that suggested measures will be put into practice by the forest owners. An example of this is that the SFA has made several attempts to promote deciduous species (including the offering of replantation grants) but with almost no success because forest owners and timber buyers view such measures as financially risky due to industry demands, and also as at odds with experience-based knowledge (see Lidskog and Sjödin, 2014). Soft regulatory tools do not seem to be the best mechanisms for breaking with established practices. Indeed, the consultants themselves wish for somewhat sharper tools:

IP03: It's something I think about quite a lot, that it's extremely interesting to try to implement a forest policy based on freedom with responsibility when no one wants to take responsibility [...] I actually think we might need somewhat higher fines, and to have, well, the possibility to put our foot down more, or something like that. Because I don't really feel that it's, that it's working very well, the way things are now.

It is not only the environmental aspects that might require some sharper tools; the production aspects of forestry are also problematized in this regard:

IP16: When I began working with this we had a forest management code that included mandatory weeding [...] It disappeared, and when it disappeared the amount of weeding dropped considerably; there's an absolute mathematical correlation there, whether you want to see it or not.

To sum up, giving advice in the face of climate change is difficult because the underlying knowledge is uncertain and/or contested, and because the time frame of climate change differs greatly from that of everyday forest management.

Societal change means that forest consultants have to communicate with an increasingly heterogeneous group of forest owners. Because of the ongoing urbanization of society, this group now includes absentee owners with little practical knowledge in forestry, either because they have inherited their property or bought it as an investment. This category coexists with the “traditional owner types” (farmers, estate owners, forestry companies, etc.). Alongside urbanization, a process of individualization is underway, leading to owners who are more critical of authority and ready to question any advice they receive. This means that the authority of forest consultants is now a matter of negotiation, rather than being derived from professional membership or from the (high) social status traditionally accorded to foresters (cf. Pfadenhauer, 2006). One respondent gives a rather drastic illustration of this development:

IP14: But things have changed. I often say that if you look at it in the long term, my grandfather was a forest warden and crown forest keeper; he was a well-respected man in the village; it was him, the priest, and the schoolteacher you went to if you had a problem [...] And my father, in the 50s and 60s and later, he was very well respected; and now I usually joke that I, the third generation, me they tell to go to hell [laughs]. It's not quite like that, but things have change quite dramatically since the 80s.

These processes of social change have resulted in a more complex – some consultants also view it as a more *interesting* – setting for their advisory practice. In a study of Finnish forest owners, Karppinen and

Berghäll (2015) found that younger owners and urban owners, more than other groups, were influenced by external norm pressure in their management decisions. Governance through information, advice, and recommendations might in this respect be well advised in the face of social change. However owners not only differ greatly in their practical knowledge and in how they relate to advice, they also have differing goals with their forest ownership. This influences what kind of recommendations they are receptive to. In line with this, Widman (2015) found that Swedish forest owners with large properties and/or with environmental or heritage-oriented goals are more likely to enter into nature conservation agreements (i.e. to preserve, develop or create areas with high values). A major consequence of societal change and an increasingly heterogeneous group of forest owners is that advice needs to be tailored to individuals if it is to be heeded; one size does not fit all. This in turn requires time and money, which brings us to the challenge discussed next.

Resource constraints and funding cutbacks are reoccurring themes throughout all interviews. The consultants have less and less time available for providing in-field advisory services, an activity they view as the core of their professional occupation and something they see as very much needed within the sector. Indeed, as Andersson (2004: 246) concludes from a study of regional differences in Bolivia, having established institutions for regular interaction between core actors seems fundamental to effective forest governance. One respondent (who is also the acting manager of his district) estimates that meeting the total need for advisory services in his district would require a four or five times larger budget. The empirical account of resource constraints does not simply reflect recent cutbacks at the SFA; the very experienced consultants interviewed (with over 30 years at the SFA) describe cutbacks all throughout their careers. This trajectory is part of a more general trend of organizational rationalization within the public sector, partly related to the era of new public management. Among other things, such rationalization tends to restrict the discretion of professional expertise (Evetts, 2009). One respondent summarizes how this development has affected his work and the possibilities for nurturing relations with forest owners:

IP18: Yes, I think it's gotten worse. It's more micro-managed, project controlled. As soon as you do anything it has to be recorded – consultation appointments, travel, time consumption – and it should fit into the different kinds of projects that are current right then on that occasion [...] It used to be that you had, well, a third of your time that you could utilize pretty freely for these contacts.

Governing through norm distribution and knowledge dissemination is resource consuming in the sense that it takes time and requires presence in the field if enduring and trustful relations are to be developed, especially in the face of societal change as described above. Resources are indeed always limited, and strategies for dealing with such limitations (see below) need to be developed by all professionals. But if resources keep getting more restricted with time, strategies for dealing with the constraints will continuously be rendered obsolete – arguably a stress factor in any occupation. Simply put, resource constraints make it more difficult for the forest consultants to do their job.

Competing advice is a potential problem in any advisory practice, in particular when advice-giving is a main means of governing (because the end-result matters). In the case of forest consultants, the “competition” mainly comes from industry buyers looking to source timber at competitive prices. Unlike the forest consultants, industry buyers have plenty of time for in-field advisory services – this is an integral part of their buying activity. The interviewed consultants portray most buyers as honest and professional, but describe a need to counter their commercial perspective on forestry:

IP11: Because I believe that often, timber buyers, they give advice on timber production and it's not always, especially with thinning anyhow, I think they often give advice to maybe harvest the wrong

trees, or too many cubic meters, just to benefit their own sawmill or the company they work for, because that's the kind of wood they want at the time. The Forest Agency doesn't need to think about that; instead we offer a biologically sound alternative.

Competing advice also comes from the Internet (where advanced knowledge in forestry is easily accessible) and from forest owners influencing each other. As Rickenbach et al. (2005) note, new types of forest owners will likely try to reshape the forest policy arena to suit their values and objectives, and this involves seeking out alternatives. Competing advice is an obvious problem when it runs contrary to what the consultants advocate. But even if it does not, the presence of alternative information sources constitutes a challenge. To influence the forest policy output, forest consultants need to be viewed as the authorities of choice in their field – not merely as one source of information among others. There is also a form of “internal” competition at the SFA, where individual consultants differ in how they prioritize among goals, mainly between environmental conservation and production. Thus, consultants risk having their advice questioned by forest owners with reference to the opinions of their own colleagues. As Bush (2010) points out, there are inherent tensions in a forest policy that gives equal priority to conservation and productivity. There are examples of colleagues being referred to as “productivity-fanatics” as well as “biologists clueless about practical forestry” in the interviews, mirroring this tension at the organizational level.

3.2. Strategies applied

The analysis finds five strategies that the forest consultants make use of to handle the four challenges. By “strategy” we mean a pattern in a stream of decisions (Mintzberg, 1978), regardless of whether or not this pattern is intentionally shaped.

Because the uncertainties related to climate change are both numerous and well known outside the scientific community, the consultants have no choice but to *articulate uncertainties* in their advisory practice. Suppressing them would be counterproductive, as it would make the consultants seem less trustworthy. Instead, the consultants assume the role of professional navigators through uncertainty, stating different possible scenarios and arguing for *risk diversification* as a rule of thumb. This may include diversification of tree species and striving to have stands of varying ages. One respondent draws a parallel to giving advice on financial investments:

IP02: I answer that I can't look into some crystal ball and know for sure; instead it's probably the same as the advice you give people about the stock market... Don't put all your eggs in one basket.

Interestingly, uncertainties can also be used strategically to achieve certain aims. Consultants often argue that a well-kept (according to standard forestry practice) and biologically diverse forest is less sensitive to storms, destructive pest agents, increased temperature, etc. Basically, uncertainties are here converted into arguments for the kind of forest management that the SFA advocates.¹

Often the consultants need to produce advice that is more specific than the examples given above. To come up with specific suggestions for a forest stand, they make use of *historical references*. The idea is that past and present local circumstances (which have varied

throughout the life-cycle of the stand) can help predict what will work in the future. When asked how they go about giving advice relevant for a distant and uncertain future, many respondents state that historical circumstances provide the basis:

IP10: Of course it has to be that way, by definition. If we do a final harvest today of a stand, we try to look at the history of the stand to understand if it turned out well or not, and so on, or if we see something bad, maybe we find out what, what they did wrong, and how we can avoid it in the future.

Past and present conditions must be considered, of course, but there is arguably an element of inertia bound up with this strategy, which will be discussed later. Historical references are also effective in providing the critical forest owners discussed above with visible “proof” of what works. Often a forest owner has varying conditions, different species of trees, and a history of different interventions being made on her property, etc. In this way, the forest functions as a “laboratory” that can be used for demonstration purposes in the face-to-face meeting:

IP02: I'm usually able to demonstrate it to them, out in the field, because then you can see, for example, you see the age of a first thinning that has a very small average trunk size, and then you say “if you had used pre-commercial thinning, then you'd have had trunks like these, which have stood a bit farther apart.”

A related theme is the importance of *contextualizing advice*, not least because of the heterogeneity of contemporary forest owners. In order to be followed, advice needs to relate to the particular circumstances and traits of the individual owner. There are many examples of such contextualization. For instance, there is no point in suggesting complex interventions to owners with a passive management style, and specific goals may require different arguments, depending on what the forest owner values in her forest (for example, diversity may be valued for aesthetic, recreational or biological reasons). Contextualization is also important in handling the problem of competing advice, because it generates trust. Forest owners are more likely to heed advice they feel is geared for their special circumstances than to follow theoretical or abstract principles. Also, as one respondent points out, without contextualization it is hard to cultivate a diversified forest sector:

IP14: You need to be able to see, well, it's very hard to explain, there is a great deal of general knowledge that you can offer, but every forest, every district is different, and every stand has its own specific characteristics and... It doesn't work to take general recommendations and apply them across the board. Because then we get the kind of one-size-fits-all forestry that we actually are trying to get away from.

By “one-size-fits-all” the respondent is referring to the historical use of standardized interventions that took little consideration of specific circumstances at the individual site, a practice common in the 1960s and 1970s. It can be contrasted with the emphasis on site-specific adaptation, a cornerstone in later forest policy (Ekelund and Hamilton, 2001). Contextualization consumes considerable time and resources, however, as the consultant needs to gather considerable information about both the owner and her forest. The resource constraints discussed above leave less space for this.

There are several accounts of *decoupling practices* among the consultants, which means doing something other than what is formally prescribed within an organization. This is a way of dealing with resource constraints. Examples include providing advisory services on issues not prioritized by the SFA, highly selective readings of internal documents, and the continuation of established local practices despite central directives, etc. For instance, one consultant who is very interested in production-management issues laments central SFA directives

¹ Of course, uncertainties can also be used strategically by other actors. When we interviewed an industry buyer (for contextual knowledge purposes) he stated that he sees climate change uncertainties among forest owners as an opportunity to buy their wood.

restricting how much time should be allocated for such advice-giving. But he provides it anyway, covertly:

IP11: We lack the resources or don't receive resources for it. But to tell the truth we actually include it anyway. If we're out giving advice to a forest owner and they ask about such things, of course I don't tell him I won't answer that, because we don't have the money, but we give the advice anyway, on the quiet.

In a Bavarian context, Böhling and Arzberger (2014) found that decoupling (in the form of symbolic rather than actual change) may occur when new modes of governance are introduced that clash with the routines of forest agency staff. We instead interpret the decoupling practices found here as resulting from a clash between professional identity and organizational demands. Decoupling enables the consultants to adequately perform their professional role as they understand it, regardless of organizational constraints.

4. Discussion

The results show that the forest consultants face great challenges in their advisory practices, but also that they have developed strategies for handling these challenges. Some questions that arise are: In what sense do these strategies make any difference, and for whom? What are the practical implications for forest consultants as well as for Swedish forest policy?

4.1. Do the strategies make any differences?

For forest consultants, a fundamental task is to give advice that is both trusted by the forest owners and in tune with the ambitions of the forest policy. This is a delicate balance, because putting policy into practice through advisory services often may involve calling established forest practices into question. This in turn requires trust; if the consultants are not perceived as trustworthy by their clients – the forest owners – their advice will not have any effect (Pfadenhauer, 2006). At the same time, being perceived as trustworthy may be difficult if the advice clearly breaks with established practices, is costly, and/or is difficult to implement. In our view, this neatly illustrates the difficult task of achieving policy goals that are not clearly backed up by formal regulation. In addition, as the analysis shows, there are also environmental, social, economic, and institutional challenges (i.e. climate change, social change, resource constraints, and competing recommendations from other forest organizations) to both maintaining trust and to the general practice of forest consultants. The strategies developed by the consultants enable them to provide advice despite these challenges. It is beyond the scope of this paper to assess the long-term consequences of this situation with regard to the professional identity and role of forest consultants, but it arguably implies a more complex and differentiated role, including a shift towards being “professional navigators” through uncertainty rather than “providers of certain knowledge.” What is clear, however, is that the strategies applied may influence the qualitative content of forest advisory services, and in turn the forest policy.

When it comes to forest policy, the strategies developed by the forest consultants may not necessarily support it. As a strategy for dealing with uncertain knowledge, risk diversification arguably yields suboptimal outcomes. (Theoretically, the optimal outcome requires forest management fully based on accurate predictions of climate change.) We cannot judge the extent to which the advice given is heeded, but Blennow (2012) found that the adaptive measures taken by Swedish forest owners in the face of climate change *do* tend to be of a risk-spreading character. On the other hand, in 2010 only about 20% of Swedish forest owners reported having taken any adaptive measures in the face of climate change – a low share compared to 50% in Germany and Portugal.

Personal strength of belief and perception of local effects of climate change explain this variation (Blennow et al., 2012). Eriksson (2014) even found rather optimistic views among Swedish forest owners regarding the impacts of climate change on their forests. Though it is necessary to articulate uncertainties in the advisory practice, it arguably matters *how* these uncertainties are articulated (Peltola, 2013). For instance, Schou et al. (2015) have demonstrated that communication about how and when climate change can be better predicted affects the decisions taken by forest managers.

The use of historical references as a strategy involves an element of inertia. As Schoene and Bernier (2012: 16) point out, in the face of climate change forest management needs to deal with the uncertain effects of management interventions and environmental change in an *inductive* manner, carefully monitoring how the forest reacts to various creative and innovative interventions. Historical references may be able to provide some information to this end, but will not do so if they are exclusively derived from “the old way” of doing things. Indeed, at the heart of the climate challenge is the fact that risks and uncertainties related to it cannot be historically observed (Yousefpour et al., 2012: 11).

Strategies for dealing with resource constraints (decoupling) do not necessarily facilitate the implementation of the formulated policy. The presence of decoupling practices suggests that organizational aspects must be considered with regards to changing norms and disseminating knowledge. Challenges identified and strategies applied by the consultants may differ from those present at the organizational level. For instance, the SFA works under the assumption that various actors within the forest sector are taking on increased responsibility for reaching forest policy goals, which means that personal in-field meetings can be cut back and partly replaced by digital services. There are also budgetary reasons for such a reduction (FSA, 2014). It is clearly not the view of the forest consultants that in-field meetings and digital services are interchangeable. They argue that knowledge always needs to be contextualized and that face-to-face meetings are crucial to influencing norms. As for increased sectoral responsibility (where other actors can provide forest owners with sound advice) the balance between productional and environmental concerns in forestry practice is of course influenced by the presence of commercial interests.

There is arguably a point to contextualizing advice when it comes to achieving a diversified forest sector through site-specific adaptation. Even if digital services can be developed to provide contextualized advice, the “output” is dependent on the information entered into such systems. Indeed, forest owners can develop into competent managers of their own forests. The forest consultants, however, are experts, which means that they have broader and deeper knowledge at their disposal; they have codified and deep tacit understanding derived from extensive experience and theoretical knowledge. This allows the expert to intuitively grasp situations and visualize what is possible – but also to better include future challenges (such as climate change issues) in their advice (cf. Eraut, 2000; Dreyfus, 2004). Given the societal change described above, it is also likely that future forest owners will become even more dependent on professional consultancy.

The qualitative approach applied here – drawing on a small sample in order to gain a deeper understanding of a specific phenomenon – cannot measure the prevalence of the challenges and strategies depicted in this study. However, we can assert that they are there, and in this paper we have described their complex nature. This raises the question of what can be learned from the Swedish case; is the knowledge gained here relevant in other countries as well?

4.2. Lessons to be learned

Since fostering flexible forests is a priority for many nations around the world, what lessons can be learned from the Swedish case? Some features of the shift “from government to governance” can be traced

worldwide, including decentralization, an increased importance of commercial actors, and an increased reliance on market-driven certification schemes (Agrawal et al., 2008; Arts and Buizer, 2009). Little however is known about how different features of governance affect forest policy outcomes (ibid.). The results of this study point towards the difficulty of achieving far-reaching system change through the use of voluntary measures. Changing established forest practices that have developed over a long period of time, and that in a short-term perspective are still functional, is an extremely difficult task, not least when the primary mechanisms for change are influencing norms and disseminating knowledge. Continued reliance on voluntary measures also requires that the work of changing norms and disseminating knowledge be geared towards achieving maximum results. As our analysis shows, there are organizational aspects to consider here. In the Swedish context, addressing the disconnect between the views held by the consultants and the central policies of the SFA is probably a good place to start.

The most general lesson to be learned is the importance of considering how best to balance the combination of voluntary, market-based, and state-based measures needed to achieve system change. The outcome of such considerations will arguably depend on how urgent the climate adaptation of forest management is considered to be.

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Appendix A. List of interviewees

Given the small number of publicly employed forest consultants in Sweden and the fundamental importance of protecting respondent confidentiality, we do not provide information about which specific regions that were included.

[Respondent number. Position(s). Education. Years at the SFA. Interview date].

1. Forest consultant. Bachelor of Science in Forest Management. 30. 14-10-07
2. Forest consultant. No formal. 10. 14-10-13
3. Forest consultant. Master of Science in Forestry. 2. 14-10-16
4. Forest consultant/District manager. Bachelor of Science in Forest Management. 20. 14-10-21
5. Forest consultant specializing in cultural heritage. Master of Science in Archaeology. 7. 14-10-22
6. Forest consultant. Master of Science in Forestry. 38. 14-11-04
7. Forest consultant. Higher Education Degree in Forest Management. 13. 14-11-04
8. Forest consultant. Bachelor of Science in Forest Management. 13. 14-11-04
9. Forest consultant. Higher Education Degree in Forest Management. 31. 14-11-05
10. Forest consultant. Higher Education Degree in Forest Management. 34. 14-11-07
11. Forest consultant. Higher Education Degree in Forest Management. 35. 14-11-12
12. Forest consultant. Bachelor of Science in Forest Management. 31. 14-11-12
13. Forest consultant. Higher Education Degree in Forest Management. 26. 14-11-14
14. Forest consultant. Higher Education Degree in Forest Management. 32. 14-11-14
15. Forest consultant. Bachelor of Science in Forest Management. 3. 14-11-17
16. Forest consultant. Master of Science in Forestry. 33. 14-11-17
17. Forest consultant. Higher Education Degree in Forest Management. 1. 14-12-04
18. Forest consultant. Master of Science in Forestry. 30. 14-12-04
19. Forest consultant/Coordinator knowledge dissemination. Master of Science in Forestry. 33. 14-12-01

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