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The challenge of introducing low-carbon industrial practices: Institutional entrepreneurship in the agri-food sector

Abstract

Contemporary agricultural practices account for a significant share of greenhouse gas emissions. Inspired by the emergent literature on institutional entrepreneurship, we seek to explore mechanisms that affect an actor's propensity to act in ways that imply suggesting and promoting emission-reducing practice changes. As influences with origin external to the organizational field are assumed to constitute such mechanisms, the paper explores their role through a case study of a project run by a public agency. Unlike extant theory, results show that the agency's propensity to act is not necessarily enhanced by extra-field influences but that such influences also limit the scope for suggesting change that challenge existing industrial practices.

Key words

Institutional entrepreneurship, divergent change, institutional logics, organizational field, extra-field influences, propensity to act, low-carbon practices, agriculture, climate change

Introduction

Contemporary agricultural practices account for a significant share of global greenhouse gas (GHG) emissions (FAO, 2006; IPCC, 2007). Promoting change towards lower emissions in the primary production of food for animals and humans is therefore of utmost importance. Drawing on the understanding of organizational fields as a community of organizations that frequently interact and share an interest in a central issue (Hoffman, 1999; Wooten & Hoffman, 2008; Kshetri, 2009), such change initiatives would concern not only actors that perform agricultural practices, but also other actors that can suggest and support new and potentially climate-friendly practices. Such actors include regulating agencies, farm advisory agencies, trade unions and other non-governmental organizations, involved in the issue of agricultural practice and hence taking part in the agri-field.

A field is characterized by one or several institutions; wide-spread norms, beliefs and rules which normally support the prevailing practices (Hoffman, 1999; Scott, 2001). Here we use the term institutional logics to refer to such institutional content (Reay & Hinings, 2009). Logics inform field actors about "the goals to be pursued and how to pursue them" (Battilana, Leca & Boxenbaum, 2009: 69) and provide a useful link between ideational content; i.e. beliefs and norms, and practice. Hence, beliefs and norms provide goals and

practices with legitimacy within a field – although the logics cannot be understood as fixed or the same for all actors (Reay & Hinings, 2009; Boxenbaum & Battilana, 2005; Battilana, Leca, & Boxenbaum, 2009). In the agri-field there are, for instance, logics that underpin organic as well as conventional, more industrialized, production practices (Boström & Klintman, 2004).

In relation to established practices and prevailing institutional logics, the promotion of GHG reduction as a field-level goal, including suggestions of new climate-friendly practices as means to address that goal, can be understood as an initiative for divergent change (Battilana, Leca, & Boxenbaum, 2009). To achieve divergent change, previous studies point at the importance of ‘institutional entrepreneurs’ (DiMaggio, 1988; Battilana, Leca, & Boxenbaum, 2009; Garud, Hardy & Maguire, 2007). Consequently, institutional entrepreneurship represents a possible route to change within the agri-field in order to reduce GHG emissions. As such attempts face severe difficulties (Holm, 1995; Seo & Creed, 2002; Garud, Hardy, & Maguire, 2007), it is important to understand mechanisms that would make actors more inclined to act as institutional entrepreneurs.

Extant research proposes that ideas and practices from other organizational fields may provide actors with knowledge of alternatives that reduce the taken-for-grantedness of prevailing practices (Clemens & Cook, 1999; Greenwood & Suddaby, 2006). Some field level actors could be more exposed to such alternatives as their role induces them to interact more frequently with agents carrying such influences (Greenwood & Suddaby, 2006). This may in turn give rise to tensions and contradictions that prompt critical reflection, reducing the commitment to prevailing practices (Seo & Creed, 2002). Contradictions may for instance arise from exposure to conflicting goals or knowledge of new issues and problems. Alternatively, it could create awareness of new ideas and practices that could be transposed across boundaries of organizational fields (Boxenbaum & Battilana, 2005). Thus, previous studies suggest that extra-field influences represent a mechanism that may reduce the liabilities of embeddedness and increase the propensity to suggest and promote divergent change (Seo & Creed, 2002; Dorado, 2005).

However, there are few studies focusing on actors that because of their position are exposed to extra-field influences (Battilana, Leca, & Boxenbaum, 2009), and the role of extra-field influences regarding ideas and practices has to be explored further. The purpose is therefore to explore how such influences affect an actor’s propensity to suggest and promote divergent change. Hence, the paper contributes to research by elaborating on mechanisms affecting the opportunities and constraints inherent in institutional entrepreneurship.

To fulfill our purpose, we approached a project run by the Swedish Board of Agriculture (SBA) – aimed to determine and promote farm level practice

changes in order to reduce GHG emissions from Swedish agricultural production. The empirical context is thus climate mitigation in agriculture, focusing on an actor that is exposed to both direct and indirect influences from several fields.

Theory

Organizational fields and institutional logics

The organizational field was originally seen as the decisive environment for the organization, containing isomorphic pressures leading organizations to adopt similar practices or organizational forms (Meyer & Rowan, 1977; DiMaggio & Powell, 1983). Fields were typically defined as a constituency of organizations sharing a technology or a market (Hoffman, 1999; Wooten & Hoffman, 2008). Activities within fields were in turn seen as structured by more or less homogenous institutional sets of beliefs, norms and rules. Recently, and in accordance with the so-called “cognitive turn”, institutional content have been conceptualized as institutional logics – system of widely entrenched beliefs that specify the goals to be pursued and the means or practices to do this (Alford & Friedland, 1991; Wooten & Hoffman, 2008; Occasio & Thornton, 2008). Subsequently, logics do not simply contain prescriptions of legitimate goals and practices but also provide actors with explanations of why these are important and rational. These logics are reinforced through frequent interactions, through which actors are socialized into certain ways of understanding the central issue (Greenwood & Suddaby, 2006).

Later research has also challenged previous conceptualizations of fields by arguing that fields evolve around a central issue (Wooten & Hoffman, 2008; Kshetri, 2009). Issues can bring actors together that also participate with other actors, around other issues, and therefore carry conflicting and disparate institutional referents (Hoffman, 1999). The acknowledgement of heterogeneity in fields is thus a starting point for addressing institutional change, e.g. changes that break with prevailing institutional logics (DiMaggio, 1988; DiMaggio & Powell, 1991; Greenwood & Hinings, 1996; Dacin, Goodstein, & Scott, 2002).

Institutional entrepreneurship

The critique concerning limitations of neo-institutional theorizing to address change has led to an increased interest in drivers of institutional change and particularly in the role that actors may play (DiMaggio, 1988; Holm, 1995; Pinkse & Kolk, 2007; Ritvala & Granqvist, 2009). Actors that leverage resources to create new institutions or transform existing ones are said to be involved in institutional entrepreneurship (Garud, Hardy, & Maguire, 2007; Pinkse & Kolk, 2007). Such institutional entrepreneurs perform an important role by challenging prevailing institutional logics, i.e. existing goals and

practices. Changes that break with established logics can be termed divergent (Battilana, Leca, & Boxenbaum, 2009).

Thus, divergent change means that new goals (e.g. the reduction of GHG emissions) and practices, or radical changes in current practices in order to achieve new goals, are introduced to a field (Battilana, 2007; Battilana, Leca, & Boxenbaum, 2009). This latter criterion is important since new goals could also be compatible, or perceived as compatible, with existing goals, indicating no change in underpinning institutional logics. Further, new goals may be used to rationalize current practices rather than to promote new ones, and the outcome of a change initiative may be limited to symbolic change. To determine the propensity to suggest and promote divergent change (in short: propensity to act), it is therefore important to analyze the types of changes that an initiative contains. When actors promote comprehensive changes in means that address new goals, it can be argued that they show such a propensity to act, or to pursue divergent change.

Institutional entrepreneurs are suggested to be skilled actors (Fligstein, 2001) capable of critical reflection (Seo & Creed, 2002), but the notion of particularly skilled actors has been criticized for conflicting with the original tenet of institutional theory as a theory of how institutional contexts embed and constitute actors and their interests (Holm, 1995; Seo & Creed, 2002; Hoffman, 1999; Hardy & Maguire, 2008; Ritvala & Granqvist, 2009). Since institutional logics define what actors can do, want to do and think is meaningful, there seems to be little room for them to suggest and promote practices that are “outside” of these logics (Holm, 1995; Seo & Creed, 2002). This relationship between actors and structure is often captured by the term embeddedness (Garud, Hardy, & Maguire, 2007), and the theoretical problem is that of explaining how certain actors can “escape” such embeddedness.

In this paper we draw on the relation between the propensity to act and embeddedness, where the latter is operationalized through an actor’s awareness (cf. Boxenbaum & Battilana, 2005), openness and motivation to promote divergent change (cf. Greenwood & Suddaby, 2006). Without awareness of alternatives there can be few suggestions of new practices, but an actor must also regard these alternatives as legitimate and rational, i.e. be open to them. Further, it is important to understand the motivation and determination in promoting change. Greenwood & Suddaby (2006) suggest that goals can be of particular importance for such motivation since the failure to reach desired goals, e.g. a GHG reduction target, may increase the motivation to pursue the issue with greater conviction. Such failure in relation to goals can be denoted as “adverse performance” and is one often observed mechanism that may motivate actors to pursue divergent change (Seo & Creed, 2002).

Mechanisms affecting the propensity to act

Although neo-institutional theory has mainly provided accounts of a decreasing likelihood to pursue change (DiMaggio & Powell, 1983; Scott, 2001), some authors have described mechanisms that increase such a possibility. This includes mechanisms within the field (Clemens & Cook, 1999; Dorado, 2005) as well as extra-field influences (Greenwood & Suddaby, 2006; Boxenbaum & Battilana, 2005). Mechanisms within the field can be ambiguities within institutional logics (Rao, Monin, & Durand, 2003), existence of competing institutional logics (Reay & Hinings, 2009), or a mix of market and institutional forces (D'Aunno, Succi, & Alexander, 2000). Further, field actors are variously exposed to such ambiguities or such competition due to their field position (Battilana, Leca, & Boxenbaum, 2009; Garud & Karnoe, 2003; Seo & Creed, 2002). Greenwood and Suddaby (2006) draw on Shils (1975) to suggest that actors may occupy central or peripheral positions in a field. Peripheral actors, on the brink of field networks, are excluded from important processes and value chains but they may also be less embedded as they are less involved in the structures and relationships in the field and hence may not fully share the same beliefs or perspectives (Garud, Hardy, & Maguire, 2007; Leblebici, Salancik, Copay, & King 1991; Greenwood & Suddaby, 2006).

Central actors, on the other hand, have less to gain from change and could therefore be regarded as less likely to function as institutional entrepreneurs. Indeed, such actors have often been noted to actively resist diverging change (e.g. Leblebici et al., 1991; Lounsbury, 2001). However, Greenwood and Suddaby (2006) suggest that influences from other organizational fields may constitute a mechanism affecting these actors. In such a situation, the power and legitimacy in one field is used to pursue divergent change, whereas the propensity to act may first have been induced by exposure to institutional referents emanating from other fields. This argument resonates with literature on institutional change pointing to the importance of influences across boundaries (Clemens & Cook, 1999; Seo & Creed, 2002). Such influences may prompt critical reflection, as contradictions – for instance between goals prevailing in different organizational fields – result in questioning of previously legitimate practices. Further, several authors suggest that extra-field influences may facilitate transposition of ideas and practices, i.e., by increasing the attention of alternatives (Greenwood & Suddaby, 2006; Boxenbaum & Battilana, 2005). Central actors, such as leading trade associations, industry dominants and regulating agencies, may be particularly exposed to these mechanisms since it is more likely that the scope of their operations induces them to interact with agents that frequently belong to other fields (Greenwood & Suddaby, 2006).

Further, while more embedded, central actors are still more likely to actually succeed with attempts at institutional entrepreneurship in a given field (Greenwood & Suddaby, 2006). Their inclusion in field networks provides them with channels for influencing other actors, and their legitimacy and status

may prompt other actors to regard their suggestions as more valid, i.e. they have normative influence. The access to more or less formal tools for promotion – in the case of a governmental agency formal policy – also provides them with coercive mechanisms or financial leverage that can induce even unwilling actors to comply. Hence, it would be of particular importance to understand the mechanisms that affect central actors, an issue which has only been sparingly researched (Greenwood & Suddaby, 2006).

Data and methodology

The case

In order to explore how influences from different fields affect an actor's propensity to suggest and promote divergent change, the Swedish Board of Agriculture (SBA) was approached for a case study. The case study approach is particularly suited for explorative inquiries (Cresswell, 2007), for capturing processes unfolding over time (Pettigrew, 1997) and where there is a need to further develop "existing theory by pointing to gaps and beginning to fill them" (Siggelkow, 2007: 21). The SBA was considered relevant as it is responsible for governmental policy in agriculture, thus providing the essential link between political targets of GHG reductions and the actors and actual practices in the agri-sector. Therefore, and of primary theoretical significance in the study, the agency is likely to be exposed to ideas and practices from several fields. It has a privileged network position and interacts with the major actors in the agri-field, not least the dominant industry organization – the Federation of Swedish Farmers (LRF) – which traditionally has had a strong influence over Swedish agricultural policy (Micheletti, 1990). SBA staff also partakes as experts in various field level processes, e.g. the development of certification schemes (Bonnedahl & Eriksson, 2011), and on other arenas where field level actors debate new issues or problems. In its investigations, SBA staff has contacts with researchers, farm advisors, environmental organizations, certification agencies, input producers and other commercial organizations. Some of these actors may certainly bring influences to the agri-field through interaction in other fields, e.g., politics, research and industry.

Thus, SBA's operations continuously place it in contact with agents that could, e.g., transpose ideas from other organizational fields. In particular, its interactions with researchers, e.g. affiliated with the Swedish University of Agricultural Sciences (SLU), and with actors from politics, could constitute such an influence. Researchers could carry with them ideas that have been developed in international research and display normative commitments to concerns other than those that emanate from the agricultural community and industry. Influences also originate from politics as policy goals are set by the Ministry of Agriculture (MA), and to some extent through the EU Common Agricultural Policy. As the MA gives yearly directions to the SBA, it could, by directing the agency towards problems (e.g., GHG reduction) or setting strict reduction goals, indicate that change in practices is necessary and that GHG

reduction is an important concern. Being part of government, which deals with national reduction of GHG's according to its overarching strategy, the MA could be less sensitive to the specific concerns of the agricultural community.

In the end, however, the national climate mitigation policy must distribute reductions between sectors, and there will be protests from industries that interpret reductions as resulting in unwelcomed regulations. This is a type of indirect influence that might affect the SBA's propensity to act. At the time when the study commenced, however, neither the position of MA, nor the general position of government regarding the importance of agricultural GHG reduction was publicly stated. The Swedish government later revealed its intentions to cut national emissions with 40% (by 2020) in 2009, but its bill did not specify in what sectors the cuts would be achieved (Swedish Ministry of Environment, 2009). It should also be noted that although SBA takes its directions from the MA, it acts with independence through its status as an expert authority; conducting its own investigations and floating its own suggestions. This is the common distribution of responsibilities in Sweden, where agencies and Ministries are expected to be clearly separated. Hence, MA representatives are not allowed to meddle with the details of agency decisions or investigations.

To promote its suggestions for policy, SBA has access to a diverse set of tools. As a general framework, there is scope for a domestic policy through the Rural Development Programmes (RDP) and environmental goals have for a number of years been a relatively prominent part of Swedish agricultural policy (Daugbjerg, 1998; Rabinowicz, 2006). These programs run for seven years at a time and contain policy tools for promoting practice change among farmers. This includes investment and project support, direct payment contracts and financing for farm counseling. Through direct payment contracts, farmers agree to adopt some particular practice, e.g. use of catch crops or cultivation of ley, over a period of five years and are financially compensated for additional costs. The RDP which ends in 2013 contains financial supports to a value of 35 billion SEK, of which half has been put up by the Swedish government and half by the EU. Counseling is cost-free for farmers and is operated through SBA's farm extension service where the aim is to promote practice changes through education. The suggestions for new RDP's are developed by the government in cooperation with the SBA. Thus, any suggestion from SBA has a chance of becoming part of RDP if it is formally approved by the European Commission.

The specific case chosen consisted of a SBA-led project to create an Action Plan (AP), as part of a strategy to reduce GHG emissions from Swedish agriculture. It was requested (by the MA), initiated in 2008 and the final report, delivered in May 2010, was to contain a list of suggested practice changes and estimations of related reductions in GHG emissions. Included in this would also be strategies for how to promote the changes among farmers. Hence, new goals

as well as means were inherent in the project's mission, and the case study made it possible to explore SBA's main activities resulting in the AP.

In a written request, the SBA was asked to suggest policy tools while considering relevant political goals (Swedish Ministry of Agriculture, 2008). Several other policy goals existed, e.g. various environmental goals as well as a goal to reduce administrative costs among farmers by reducing the complexity of regulations.

The action plan project was staffed with SBA employees, and headed by staff with prior GHG experience. The project also included another environmental issue – eutrophication of lakes and rivers – on which roughly half of the project staff worked. The project had an advisory board containing Sweden's leading experts on agricultural GHG emissions accompanied by a LRF representative and a representative from the Swedish Environmental Protection Agency. Hence, agents with activities outside the agri-field, e.g. governmental representatives and researchers, had an influence over the project.

The suggestions were to be implemented 2011-2020. This meant that the AP would contain ideas about how to use the tools in the current RDP but also ideas about tools to be included in the coming RDP. It was also stated that the AP should constitute an instrument within a long term effort to reduce greenhouse gas emissions (Swedish Ministry of Agriculture, 2008). In comparison to earlier attempts to deal with GHG's (see Swedish Board of Agriculture, 2008), the project was by far the most comprehensive attempt in terms of number of investigators involved and time invested.

Method

Qualitative methods were used since we largely followed an unfolding process (Pettigrew, 1997) and as it is difficult to know beforehand how extra-field influences and the propensity to take action would appear in the case. Thus, qualitative methods were more in line with the explorative approach (Silverman, 1993), and in order to capture the project process as well as retrospective events of relevance for the process, interviews and document studies were chosen (Yin, 2005). Semi-structured interviews were carried out by the first author of the article, first on site and later also over the phone, in the early spring of 2010. As a minimum, the interviews lasted one hour. They were audiotaped and fully transcribed. Experiences from the initial interviews convinced us that respondents were able to describe details of processes over the phone. Largely, this was also the mode of interaction and communication within the project. Subsequently, despite missing out on potentially important non-verbal cues, phone interviews were chosen, which reduced GHG emissions from travel and enabled us to accommodate hard scheduled respondents.

We wanted to interview the persons most knowledgeable about the project as well as to explore the variety of contacts and influences on the project. Therefore, we deemed it appropriate to interview all SBA staff working on GHG reduction strategies as well as the advisory board members concerned; in total 15 people. Two out of these 15, one expert and one SBA staff, declined to be interviewed, referring to their work load. Two project leaders that had a particularly central role were interviewed twice to follow-up on new information emerging from other interviews.

Additional respondents were subsequently selected as a result of the questions and patterns arising from the interviews (cf. Lincoln & Guba, 1985; Pettigrew, 1997). Therefore, additional interviews were conducted with the SBA's chief economist, a representative of the Swedish Society of Nature Conservation (SSNC – the main domestic environmental NGO), other SBA staff, as well as the government representative responsible for dealing with the completed AP report. In total, 20 interviews were conducted, involving 18 respondents (see Table 1).

Table 1: List of respondents

Respondent	Type of interview	Organizational background
Project manager	Meeting/ Interviewed twice	SBA investigator/project manager (1)
Project manager	Phone/ Interviewed twice	SBA investigator/project manager (2)
Project staff	Phone	SBA investigator (3)
Project staff	Phone	SBA investigator (4)
Project staff	Phone	SBA investigator (5)
Project manager	Phone	SBA project manager (6)
Project manager	Phone	SBA project manager (7)
SBA's agriculture extension service/ project staff	Meeting	SBA investigator (8)
Advisory board representative	Phone	Lund University researcher on bioenergy production (9)
Advisory board representative	Phone	SLU researcher – expert on organogenic soils (10)
Advisory board representative	Phone	SLU researcher – expert on cattle production (11)
Advisory board representative	Phone	Swedish Environmental Protection Agency (12)
Advisory board representative	Phone	LRF representative – expert on GHG emissions (13)
Chief economist SBA	Phone	SBA chief economist (14)
Government representative	Phone	MA staff (15)
SBA's agriculture extension service	Meeting	SBA agriculture extension manager (16)

Section manager SBA	Phone	SBA section manager – chair of Advisory Board meetings (17)
Agricultural expert	Meeting	SSNC (18)

The interviews aimed to capture how different ideas for emission reduction had been discussed, modified, selected or dropped, and what the guiding rationales for these decisions were. This was done by comparing answers from respondents concerning the same idea. Further, respondents were asked about the origin of ideas, and the role played by various agents, such as the MA and researchers, in the process. Using a semi-structured interview guide, opportunity was provided for the respondents to reflect freely on the issues and how they understood the processes and contingencies concerning the task.

As the project had been running for one and a half year when the interviews were conducted, parts of the interviews concerned prior events which had to be reconstructed by the respondents. Since respondents may reinterpret earlier events to better fit with later understandings or have trouble recalling what actually had occurred, several sources of secondary material, i.e. notes from stakeholder workshops and intermediary reports describing prior activities, were utilized (cf. Silverman, 1993). Respondents were asked questions about the ideas and discussions mentioned in this material.

Further, written responses to the referral round, held at the end of the project, were analyzed to reach an understanding of how different stakeholders/actors tried to influence the project. A previous SBA report on means to reduce GHG emissions, produced in 2008, was also included in the material as a clue to how ideas had been developed. Media coverage from agricultural trade journals and various newsletters were also used to generate understandings of the role and positions of particular actors and the general workings of Swedish agricultural policy and practice.

The analysis consisted of several steps. The first step was close to the empirical material, detailing the discussed ideas for practice change and their turnout within the AP (Table 2). Second, we interpreted whether the ideas featured in the project could meet a definition of divergent change in order to begin our assessment of the propensity to suggest and promote divergent change. For this purpose, we used two dimensions which represent our operationalization of Battilana, Leca and Boxenbaum's (2009) definition of divergence as change in prevailing means (farm activities) and ends (goals). An idea for change was interpreted as being less comprehensive if it affected only one or few of the major activities performed at, and in relation to, the farm. The idea's relation to the goal of reducing GHG emissions was assessed through estimations made by SBA staff quantifying emission reductions. These estimations, in turn, were based upon the figures within Sweden's national reports to the UNFCCC (United Nations Framework Commission on Climate Change) and hence

followed standardized and agreed upon ways of estimating GHG emissions (Swedish Board of Agriculture, 2010a). A systematic account of this step is found in Table 2.

Third, our aim was to understand this “outcome” – posing the question “why” this propensity to act (i.e. suggest and promote divergent change) appeared, and the role played by extra-field influences in this process. The propensity to act was assessed utilizing the three components – awareness, openness and motivation – proposed by Greenwood and Suddaby (2006). For each component, we analyzed the role of extra-field influences, utilizing categories developed from our data (see Table 3). Finally, based on the patterns emerging from Table 3, we theorize on the role played by influences from different fields for an actor’s propensity to suggest and promote divergent change.

Project ideas

Below, we describe SBA’s propensity to act through narrated examples of how different ideas were selected, discussed and evaluated in the project. The entire set of project ideas is displayed in Table 2, which also in its fourth column indicates the position of each idea on a continuum between divergent and non-divergent change (for details, see Table 4 in Appendix). The last two columns of Table 2 indicate the positions of the main agents that were involved and whether the respective idea was included as a policy suggestion in the AP report.

When the project commenced, SBA investigators, with the purpose to gather ideas, met with the advisory board and held open workshops that included various actors, e.g. farm advisors, agricultural producers and other industry representatives. However, respondents remarked that most ideas mentioned at these workshops were already known. In fact a majority of them (ideas A, C-G and L in Table 2), were discussed in a report preceding the project (Swedish Board of Agriculture, 2008). This report, which followed the 2006 national election and climate change peaking on the political agenda, was a consequence of SBA trying to get a hold of the issue before the new government would formally request a report:

And with the climate issues, perhaps it was the case that we waited too long at the SBA. We were not really aware of what was going to happen. But it was the case with Sweden that the climate issues did not rise on the political agenda until the new government had taken office (SBA chief economist (14)).

Further still, as SBA met with the MA, the request was delimited to not include ideas about consumption or about the composition or level of current agricultural output. Hence, some radical change ideas were abandoned right away, e.g., the idea of reducing overall output (B) or reducing domestic meat consumption and production. As the request was formulated, it also directed attention towards certain ideas, part of current agri-policy, as the investigators

were asked to look for synergies between practices already promoted to reduce eutrophication and those that could reduce GHG emissions (D).

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Table 2 Description of project ideas

Ideas for low carbon agriculture discussed	Comprehensiveness of change	Effect on GHG emissions	Divergent/non-divergent	Involved agents' positions	Outcome of project process
<p>A. Carbon storage in farm land</p> <ul style="list-style-type: none"> • carbon storage in pasture land and other grass lands • carbon storage in cultivated soils • adding of bio coal 	Carbon storage in land for grazing would require little to no change in cattle grazing. Increased carbon storage in cultivated soils would entail several smaller changes in e.g., tilling practices, choice of crops, fertilizing etcetera. Adding of bio coal would also require a number of changes.	Grazing lands store too little carbon to reduce GHG emissions. Reductions from carbon storage in cultivated soils or the adding of bio coal were never quantified.	Towards non-divergent change	SBA investigator & MA dismissive, cattle producers hopeful	No immediate action – further inquiries suggested. Adding of bio coal more or less dismissed.
B. Decreased output	Would imply large changes in terms of ceasing production or shifting towards less intense production practices, e.g. organic farming.	Effects never quantified but are likely to be the most reliable way to reduce emissions even if some background emissions would remain.	Towards divergent change	SBA project management & MA dismissive	Explicitly removed, early on, by delimiting the purpose of the project.
C. Organic farming	Includes several changes in major activities at the farm, e.g., type of inputs, certification, pesticide use, etcetera.	Effects never quantified in the project but shown in other reports (Swedish Board of Agriculture, 2010c).	Towards divergent change	SBA investigators & researchers dismissive; advocated by environmental organizations and organic farmers	Explicitly removed by framing organic farming as a “package” of practices rather than as one single idea.
D. Optimizing use of nitrogen	Implies a number of smaller changes when it comes to how, when and where fertilizers are applied.	Effects positive but not quantified.	Towards non-divergent change	Promoted in MA's written request, SBA investigators & researchers uncertain concerning effects.	No additional suggestions besides changes already implemented through current agricultural policy.
<p>E. Changes concerning organogenic soils</p> <ul style="list-style-type: none"> • decreased intensity in cultivation • cultivation of energy crops • creation of wetlands 	If implemented, a large change for certain farmers, who would switch from cash crops to fodder crops. Effects on prior investments made and overall operations, i.e., several major activities, at those farms.	Effects initially thought to be substantive – put forth as the “big scoop”. Quantified in earlier project (Swedish Board of Agriculture, 2008).	Towards divergent change	SBA investigators positive, researchers & industry representative protesting	Suggestion of creating a particular financial support for practice change was removed from the final report

F. Replacing imported soy	Would imply a number of smaller changes among several actors, e.g., input purchasers, dairy farmers and crop cultivators.	Quantified but small effects.	In between non-divergent and divergent change (small GHG impact).	SBA investigators, researchers & industry representative positive	Suggestion to set aside funds to finance joint projects with industry actors.
G. Changes in production of meat and milk <ul style="list-style-type: none"> • increased yields • change feeding practices • food additives 	Would imply a number of unspecified smaller changes among cattle farmers.	Quantified but small effects.	Towards non-divergent change	Researcher forwarding ideas, SBA investigators positive	Suggestions to finance counseling directed towards dairy farmers.
H. Increased energy efficiency	Would require a combination of changes from smaller behavioral changes to investments and replacements of energy systems.	Quantified effects depend on type of change.	In between non-divergent and divergent change.(differs according to the magnitude of the changes implemented).	SBA investigators positive	Suggestions to increase counseling efforts directed towards farmers.
I. Production of renewable energy <ul style="list-style-type: none"> • crops for biogas • crops for liquid fuels • crops for solid fuels 	Would require a change in what farmers cultivate e.g. having to learn about new types of crops, but also entering into other supply chains.	Quantified and substantial effects.	Towards divergent change	SBA investigators & researcher positive, indicated by MA strategies	Suggestions to increase and maintain different financial supports under new RDP.
J. Decaying of farm yard manure	Would require investments in biogas plants as well as entering into new supply chains. However would require small changes in agricultural practice.	Quantified and substantial effects.	Towards divergent change	SBA investigators positive, researcher positive, indicated by MA strategies	Suggestions to increase and maintain different financial supports when the current RDP expired.
K. Reduced tillage	Would affect at least one major activity, i.e. pesticide use.	Quantified but small effects.	In between non-divergent and divergent change (small GHG impact)	SBA investigators positive	Suggestions to include in existing counseling modules already offered to farmers.
L. Change in choice of synthetic fertilizers used	Would likely require very small changes.	Quantified but small effects	Towards non-divergent	SBA investigators positive, environmental organizations and organic farmers protesting against this as an alternative to organic farming.	Suggestion to include in existing counseling modules already offered to farmers; suggestion to finance projects together with industry actors to investigate possible certification/labeling.

SBA's initial selection of the ideas

As indicated in column six of Table 2, some of the more divergent ideas for practice change were not singled out for further evaluation. This for instance became the fate of organic farming (C). Instead, the project staff investigated the effect different ideas would have on both conventional and organic farming. It was described as a clever way to escape the controversy over whether organic or conventional practices were the most “climate friendly”. In several heated media debates, researchers from the SLU had attacked proponents of organic farming for not providing evidence for its proclaimed positive environmental effects and endangering yields (e.g. Andersson et al., 2009a; 2009b). Investigators were reluctant to take sides:

It felt like we did not avoid the issue but instead escaped the trap that one often finds oneself in when this is discussed (SBA investigator/project manager (1)).

As arguments for choosing this approach appeared already in the 2008 report, one interpretation could be that this decision had actually been made already before the project started (Swedish Board of Agriculture, 2008). It was later harshly criticized in the two referral rounds, both by SSNC, the main domestic environmental organization, and by the association of Swedish ecological farmers:

The [Swedish] Society of Nature Conservation find it extremely remarkable that the action plan choose to disregard the possibilities to reduce GHG emissions by increasing organic production (Swedish Society for Nature Conservation, 2010:1).

To ignore, in an action plan to reduce GHG emissions, the part of Swedish agriculture that does not e.g. use synthetic fertilizers is not correct. Since many of the discussions in the action plan deal with the possibilities within current policy, organic farming should be included whether it is viewed as separate practices changes or a package (Swedish Ecological Farmers, 2010:1).

However, at this stage in the project, the report was already more or less written and the SBA did not take notice of the critique in the final report. Nonetheless, at least one other report from the agency itself showed that organic practices could substantially reduce emissions as neither protein fodder nor synthetic fertilizers was used (Swedish Board of Agriculture, 2010c). Rather than to promote organic farming, the staff discussed and suggested that counseling could reduce the emissions from fertilizer production by inducing farmers to use synthetic fertilizers produced by best available technology (L). SBA staff were, however, pessimistic of the resulting reductions, and this somewhat less forceful alternative was also criticized by the SSNC.

SBA's evaluation of selected ideas

As described, an initial selection of which ideas to evaluate occurred within the first year of the project. Next, the SBA investigators started working individually with the different ideas, which resulted in several parallel processes within the project. In this phase, contacts with the experts on the advisory board intensified.

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We read a lot of research. It is some kind of decision process in the project group, we send texts to each other and to the advisory board and also have some direct contact with researchers (SBA investigator/project manager (2)).

A general pattern of these interactions was that the researchers at the advisory board posed questions and added complexity to the ideas, for instance by pointing to effects of a practice change within the whole production chain:

One has to look at systems and try to see the whole picture, because if one starts to poke around with details in one part without being aware of it, it easily affects other parts in the chain in a way that was not planned from the beginning (Researcher (11)).

Researchers added to the uncertainty attached to some of the ideas, pointing to the difficulty of designing practice changes that really would reduce emissions. This, for instance, concerned attempts at finding new means to directly reduce N₂O emissions from arable land.

[...] we have the emissions of N₂O from soils, where there is an uncertainty of +/-80 % of the effect on emissions – we have that range to relate to if we are to suggest a practice change that cost this much for someone. It's a problem with cost efficiency. On many occasions we cannot quantify; we cannot say how many kilograms or CO₂-equivalents a practice change would save. We can say if that it probably is positive but not more. There is no model that can grasp how great the reduction will be. That is a difficult basis for suggesting policy (SBA investigator/project manager (2)).

In this particular case, uncertainties meant that current policy, targeted at continuously optimizing fertilizer usage among farmers, emerged as the only alternative (D). Researchers also directly challenged ideas, for instance the idea to change cultivation patterns on organogenic soils (E). The idea had been drafted in an earlier report (Swedish Board of Agriculture, 2008) but was now questioned by a researcher as not containing any scientific backing. This objection resulted in the idea being dropped, despite the SBA's rather advanced plans, e.g., expressed in the 2008 report. The LRF representative also criticized the idea, adding that farmers cultivating these organogenic soils feared that their land-use would be prohibited:

They [farmers] don't want a ban put on this production [...] I questioned the scientific backing [...] And the researchers agreed, so the current report does not include the idea to put 300 million SEK on something that is so uncertain (LRF representative (13)).

Nevertheless, backing actually existed in international research, according to earlier SBA reports (Swedish Board of Agriculture, 2008), and some of the SBA investigators believed that the idea was a good one:

There are still many indications of it being a good practice change, but the latest doubts have forced us to back down a little. But there are still experiments. There are experiments in Finland that indicate that [a change to] perennial ley would be a good idea (SBA investigator/project manager (1)).

Sometimes, researchers advocated ideas based on their own research. The leading Swedish expert on CH₄ emissions from ruminant cattle was conducting experiments on how to replace the use of imported soy with domestic fodder

and forwarded these ideas to SBA staff (H). He helped the SBA staff in crafting the arguments and in finding underpinning sources of information needed to write-up the suggestion for policy. It also appeared to have support from various agricultural actors – e.g. the trade association for the dairy industry:

When it comes to dairy production, Swedish Milk, that represent the dairy industry, work hard to reduce usage of soy because however you calculate, this is the largest environmental problem with Swedish production. And it keeps popping up. It was in the press just now and it has kept coming back that using and importing soy is something that is not good and an environmental problem for Swedish production (Researcher (11)).

The LRF-representative was also positive, emphasizing the importance to achieve a “change in what the farmers grow”, something advocated by the LRF.

Eventually, the project arrived at several suggestions concerning the issue of imported soy, e.g., state funding for joint industry projects.

Concerning carbon storage in semi-natural grasslands (A), agricultural stakeholders, i.e., certain producers, continued to influence the evaluation. The expectations from cattle farmers made it clear that the project report could not ignore the idea (even if investigators were skeptic):

There have been very large expectations upon the investigations that we have made, from the industry because they really, really hope that these grasslands store a lot [of carbon]. They are working uphill as the animals are portrayed as climate villains[...] We choose to include [the report’s text on carbon storage] anyway in the practice change section, which might appear odd, but it is simply because there are such enormous expectations which would cause many questions if it was left out (SBA investigator (3)).

The reason that this whole section on storing carbon in soil was written in the first place, despite the fact that it is written as a background, was that there was a pressure and a wish – one could not leave it out (SBA investigator (4)).

As semi-natural grasslands are currently supported as a means of promoting biodiversity (another national environmental goal), the investigator feared that concerns for GHG reduction could “crowd out” this goal. Removing these supports would basically mean terminating this production:

We pay out 700-800 million SEK annually for the keeping of natural grasslands [...] In the societal debate, the climate issue is huge and this permeates politics too. It is at the moment much stronger than biodiversity—there is no question about it (SBA investigator (3)).

This investigator was, however, reassured by rumors concerning the position held by the MA who were believed to favor biodiversity over climate when it comes to natural grasslands.

Ideas of increasing the production of energy crops, e.g. salix, were in line with current policy (the RDP already provided financial support for farmers that cultivated these crops) (I). In the final report, the staff estimated that increasing annual salix production with 5000 hectares would cost 37 million SEK. This idea, as well as the idea to increase and promote biogas production (J), was morally supported by a researcher.

Yes, we still need subsidies to increase and develop biogas production[...] My impression is that those who work with these sections are very thorough and that the writers involved are very keen on giving a good and fair presentation of the research material that exists. From that aspect the work contains high quality (Researcher (9)).

As the current RDP already had funds set aside for increasing this production, the suggestion was to maintain or increase the policy efforts:

The agency makes a preliminary suggestion to maintain or increase the current campaign with investment supports to manure based biogas [production] [...] This would mean putting up 75 million SEK per annum from 2014 onwards to biogas investments, making the total amount 225 million SEK for the period 2014-2016 (Swedish Board of Agriculture, 2010a: 31).

The SBA staff found support for efforts to increase bioenergy production in various statements made by the government (Government budget quoted in SBA report):

In the Government budget proposal for 2010, it is stated as goals that "the green sectors are environmentally and resource efficient and have a key role in the production of Swedish energy". Further it is stated that primary products from agriculture and forestry should contribute substantially to the production of renewable energy (Swedish Board of Agriculture, 2010b: 100).

It should be noted that an increase in bioenergy production had been the goal of several earlier policies and reports, but, in those cases, as means to pursue other policy goals, e.g. to reduce dependency on oil (Eckerberg, Nilsson, Gerger-Swartling, & Söderberg, 2007).

When deciding what ideas to include in the final report, the SBA staff reflected upon aspects that would be important for the politicians. It was assumed that politicians would ultimately compare between sectors and base decisions on cost efficiency, i.e. the price of reductions. Any uncertainty when it came to how much a change would reduce emissions thus made calculations of cost efficiency extremely difficult:

It's a problem with cost efficiency. On many occasions we cannot quantify – we cannot say how many kilos or CO₂-equivalents a practice change would save. We can say if it probably is positive but not more. There is no model that can grasp how great the reduction will be. That is a difficult basis for suggesting policy (SBA investigator/project manager (2)).

Based on these criteria, ideas for which cost efficiency could not be estimated were downplayed. The SBA staff did, however, not refrain from making suggestions that were relatively expensive as they considered budget decisions to be up to the politicians.

SBA's final suggestions

The suggestions in the AP report indicated that a reduction of 11 %, or 1.4 million tons CO₂e, could be reached for the period 2011-2016. Most of these reductions would result from an increase in bioenergy production, and a substantial part – 815 000 tons CO₂e – would follow already from existing

bioenergy policies (I, J). When it came to the major emission sources, N₂O from arable land, CH₄ from ruminant cattle and CO₂ from organogenic soils (see Table 4 in appendix), the project only managed to suggest minor practice changes. Even the total 11 % reduction was far from the 40 % goal set by the government, a fact that could be related to the scope of the ideas discussed:

We do not think it is possible [to reach that goal] if consumption patterns are not changed and the amount of animals kept are not decreased (SBA investigator/project manager (1)).

Given that consumption patterns were not to be questioned, the investigators concluded that the biological background of emission sources made it particularly difficult to come up with efficient practice changes within their sector. They concluded that uncertainties concerning emission reductions were too great and that reductions would be very expensive compared to other sectors.

Because emissions from agriculture are biological, they are affected by factors beyond control and much more uncertain. This makes it difficult to estimate the efficiency of mitigating actions and it also makes cost efficiency hard to calculate (Swedish Board of Agriculture, 2010a: 19).

It is important to show that agriculture is special compared with many other sectors; that it is much more difficult and probably much more expensive to reduce emissions in agriculture compared to other sectors (SBA investigator/project manager (1)).

Hence, the observation that many discussions dealt with limited adjustments at the farm level was further accentuated when it came to choosing what changes to ultimately promote. Decreased output and organic farming (B, C) were dropped early in the process, and change concerning organogenic soils (E) was dropped due to protests emanating from the Advisory Board. Thus, the first step of the analysis indicates a somewhat limited propensity to act. Among the divergent ideas, the agency chose to go ahead with those that were the least controversial (I, J) and discarded the others (B, C and E).

Next, we aim to explain this outcome by attending to the extra-field influences expressed by the participating agents. We do this by step-wise analyzing how these influences affected the components making up the propensity to act, i.e. awareness, openness and motivation. The suggestion from extant theory is that extra-field influences could increase the propensity to act (Greenwood & Suddaby, 2006; Boxenbaum & Battilana, 2005), but why was this effect limited in the project?

Awareness

Following Greenwood and Suddaby (2006), we view awareness as one of three necessary components leading up to institutional entrepreneurship. Awareness signifies the focal actors' degree of knowledge of alternative possibilities – here ideas of divergent change. When it came to creating awareness of ideas and alternatives, extra-field influences can be labeled as either direct or indirect. We equate direct influences with the above described interactions, within the

project, with agents carrying such influences, while indirect influences do not depend upon direct interaction. It may, e.g., consist of proactive reasoning by the SBA in anticipation of positions of other important actors.

Empirically, awareness corresponds to the initial stages of the project when SBA staff made conscious efforts to gather ideas. However, the SBA staff was aware of ideas and possible solutions already before the project started, e.g., the SBA report from 2008 discussed a majority of the ideas. Non-divergent ideas, e.g., promotion of semi-natural grasslands, were in many cases already endorsed by current agri-policy, as means to address other environmental concerns. Subsequently, it would seem that attempts at gathering ideas were made partly to ensure that ideas were not being missed and partly as a ritual to display openness towards different stakeholders. It also seems as if SBA was aware of potential radical approaches as they took quick measures to delimit the mission and have them removed from the project's focus.

Thus, our interpretation is that extra-field influences, e.g., contacts with researchers, had worked over the course of similar requests, targeting other environmental issues or questions of agricultural practice, to create an awareness of potential innovations and solutions. Bioenergy production had for instance been discussed for some time and was already supported by the RDP. It seems that being updated on possible ideas was inherent in the role as an expert authority. The agency must anticipate possible requests from the MA and continuously collects information on issues that may appear on the political agenda. Hence, boundaries between agricultural, political and research fields are continuously bridged (Greenwood & Suddaby, 2006) as part of the role as an expert authority.

Although SBA staff frequently interact with political actors, influences from the MA can best be labeled as indirect. MA issued a request but gave little direct information of how it was to be addressed. However, the initial agreement between SBA and MA regarding the request's focus did indicate that the MA was not looking for radical changes along the lines of reducing agricultural output or taxing meat. This influence did in itself not contribute to creating awareness of ideas and alternatives to reduce emissions. Rather, the request directs the attention to specific problems or goals but largely leaves it open for the agency to decide how to address them. The corresponding development of competence within SBA, however, occurred in parallel with independently initiated investigations; e.g., the SBA had already started to investigate the climate issue before the actual request was put forth. It seems that SBA anticipated that this issue would be a future concern for the MA and started to invest in knowledge and competence to be ready if and when a request would be issued. Thus, influences from the political field motivate and stimulate interactions and contacts with researchers and others that carry ideas of alternative ideas and practices.

However, MA's request, stating that the agency should look for synergies or conflicts with current policy, did direct the attention towards non-divergent ideas, which is understandable as the project could also be interpreted as an evaluation of possible conflicts between current agri-policy and the goal of reducing GHG emissions. Hence, MA influence could be interpreted as reducing the motivation for seeking out brand new ideas.

Another aspect of how extra-field influences affected awareness was the difference in how relevant the ideas were perceived. In comparison, agents from the agricultural community appeared to be less legitimate as their ideas were being labeled as "old"; the interactions with them were perceived as not yielding that much new information. Researchers were on the other hand understood as bringing in "new" and fruitful ideas, despite the fact that a majority of the ideas were already more or less known.

Subsequently, some agents "carrying" extra-field influences seemed more legitimate (Dacin, Goodstein, & Scott, 2002; Boxenbaum & Battilana, 2005) than others. Never-the-less, given the broad awareness of ideas for change, displayed in the project as well as in earlier projects, it seems that lack of awareness cannot explain the limited propensity to act that was observed. We therefore examine whether this can be explained by difficulties in remaining open to divergent alternatives or by a lack of motivation to strive for GHG reductions.

Openness

Openness describes how a potential institutional entrepreneur relates to alternatives and is a necessary component behind institutional entrepreneurship (Greenwood and Suddaby, 2006). It appears as if openness best relates to the evaluations within the project. Since the SBA was aware of most ideas, the project could be interpreted as, in essence, an evaluation of what ideas to follow through on. But at the very start of the project, a lack of openness was revealed when some potentially radical ideas were removed from the project's focus. Furthermore, organic farming had been more or less removed already in the 2008 report, when the SBA concluded that it was pointless to discuss whether organic or conventional practices were most "climate friendly" (Swedish Board of Agriculture, 2008).

In the evaluation stage, the project appeared closed for direct influence from agents other than those participating through the advisory board (with the exception of the LRF representative). The way the project was set up – with an advisory board consisting mostly of agricultural researchers – secured a strong influence from these agents and limited the possibilities for other agents to affect the process. The exception to the strong influence from researchers concerned the investigations regarding carbon storage in farm land, where the pressure and expectations from cattle farmers meant that the SBA investigator did not dismiss the ideas but included them in the report.

Some researchers more directly questioned and added complexity to the ideas. This increased the uncertainty for some potential policy areas, such as an idea for divergent change (organogenic soils). Ultimately, ideas which were challenged by researchers, did not survive the process despite initial support from SBA staff members. Conversely, the two ideas relating to bioenergy production, i.e. divergent change, were backed by a researcher, and ultimately became suggestions.

When researchers criticized ideas, the SBA staff reflected upon the distaste of politicians to “waste tax payer’s money”, and became insecure and reluctant to continue with ideas. However, when researchers backed ideas, SBA investigators instead saw the possibilities within political discourse to frame suggestions in accordance with existing political statements and declarations of intent. Thus, this indirect influence from the MA, in terms of how suggestions should be backed, could be interpreted as carrying two aspects; on the one hand an urge for fiscal discipline, and on the other hand an abundance of somewhat ambiguous goals and intentions in need of policy suggestions. Given the existence of multiple and ambiguous political goals, there existed rich possibilities to frame suggestions.

This need to frame suggestions also depends upon the type of idea. Non-divergent ideas for change rightly provoked less worry as such ideas would often not depend on state funding for their implementation (or they were already funded). For instance, efficiency improvements were perceived to be profitable for farmers and would not require the usage of tax payer funds.

The way the project was set up also reflects the relative legitimacy that agents from different fields possess, making it more difficult for certain agents, e.g., environmental groups, to directly influence SBA’s openness to particular ideas. The case demonstrates how the legitimacy of researchers lends them a very strong ability to shape ideas and suggestions. These differences in legitimacy provide an interesting perspective on the role of a focal actor. While the SBA is a centrally placed actor in its field, in issues based on research, the legitimacy of its staff as experts is limited in comparison to that of practicing researchers.

Thus, it seems that extra-field influences affecting openness explain most of the outcome in terms of what suggestions that were made. Even if a broad range of ideas were picked up in the project, the SBA staff did not remain open to all of them. However, in the last section we look for potential countervailing influences that could have increased the motivation to actually arrive at a set of strong suggestions to promote.

Motivation

Could the national goal of reducing emissions with 40 % by 2020 in some way have made the staff to push harder in finding changes? A strong political

pressure could have countervailed some negative influence from researchers. It might also have created a necessary sense of urgency (cf. Mitchell, Agle, & Wood, 1997) that could have reduced the fear of uncertainties and overridden the inertia induced by researchers adding complexity. Greenwood and Suddaby (2006) argue that motivation increases when performance is understood as adverse in terms of the goals that an actor strives for. Declining profits may for instance motivate an actor to challenge normative and regulative frameworks constraining practices. One could therefore argue that if direct goals for reducing agricultural emissions had been set, it would have been more apparent that suggested reductions were inadequate. The existing 40 % goal on national level was however unclearly related to agriculture and the project. The SBA staff thought that the government would distribute the goal according to where implementation would be cheapest.

This ambiguity concerning goals provided SBA staff with less pressure to come up with radical ideas in order to reach substantial reductions. Thus, the motivation to press for novel solutions or to try controversial pathways was absent. Another aspect of the influence from the MA and the government was the great abundance of policy goals. An interpretation is that this makes it less pronounced if the performance of a particular sector or activity falls below the political ambitions. Any set of suggestions is likely to satisfy at least some political goal. Hence, even if the AP did not provide forceful ways of reducing GHG emissions, it may satisfy other goals – for instance ones concerning bioenergy production. With this perspective, it is, on the one hand, hard to fail, and, on the other hand, in a certain sense, policy will always be failing.

Turning to influences from the research field, researchers seemed to indirectly communicate the difficulties in finding forceful solutions to reduce emissions. This occurred for instance by stating their own uncertainties regarding possible suggestions and their own difficulties coming up with ideas. Researchers and SBA staff in unison blamed the biological mechanisms behind agricultural emissions. The complexity of these mechanisms seemed to indicate to the SBA staff that it was virtually impossible or extremely costly to substantially reduce GHG emissions. Combined with the uncertainty regarding sectors to be targeted for emission cuts, this seemed as a solid argument for refraining from such cuts within the agricultural sector.

The propensity to act

The analysis shows that extra-field influences had a diverse effect on the propensity to act. First, influences on the ideas were direct, channeled through interactions with researchers, or indirect, e.g., through goals set by politicians. Further the role of extra-field influences varied depending on the agent concerned, the stage of the project and the type of idea up for discussion. Formally and informally, agents were given different roles, legitimacy and possibilities to affect the outcome. Table 3 summarizes our interpretation of

extra-field influences on the propensity to suggest and promote divergent change within the project.

Table 3 The role of extra-field influences on components of the propensity to act

	Awareness		
	Agricultural stakeholders	Researchers	MA
Change ideas	Divergent/non-divergent	Divergent/non-divergent	N/A
Type of influence	Direct	Direct	Indirect
Stage within project	Initial stage, late stage (referential round)	Through-out	Initial stage
Type of interaction	Stakeholder meetings, referential round, informal contacts	Scientific reports, contacts with advisory group, direct contacts	Action Plan request
Contacts perceived as	Not yielding new information	Valuable	N/A
Legitimacy of agents	Low	High	High
	Openness		
	Agricultural stakeholders	Researchers	MA
Type of influence	Low	Direct/indirect	Indirect
Stage within project	Initial stage, late stage (referential round)	Initial selection, evaluation	Write-up (late stage)
Type of interaction	Stakeholder meetings, referential round, informal contacts	Scientific reports, contacts with advisory group, direct contacts	Written reports, statements, declarations of intent, strategy documents etcetera
Contacts perceived as	Less fruitful	Creating uncertainties/constructive	N/A
Legitimacy of agents	Low	High	High
Outcomes	N/A	Divergent change without support removed/ with support put forth	Framing of suggestions/removal of ideas without researcher support
	Motivation		
	Agricultural stakeholders	Researchers	MA
Type of influence	N/A	Direct	Indirect
Stage within project	Initial stage, late stage (referential round)	Late stage	Write-up (late stage)
Type of interaction	Stake holder meetings, referential round, informal contacts	Contacts with advisory group, direct contacts	Written reports, statements, declarations of intent, strategy documents etcetera.
Contacts perceived as	Irrelevant	Reducing overall motivation/furthering particular ideas	N/A
Legitimacy of agents	Low	High	High
Outcomes	N/A	Acceptance of difficulties in forcefully reducing emissions	Low pressure to achieve forceful reductions

Discussion and conclusions

Institutional entrepreneurship scholars have tried to understand the mechanisms affecting actors' propensity to pursue divergent change (Seo & Creed, 2002; Greenwood & Suddaby, 2006; Garud, Hardy, & Maguire, 2007). Several authors have suggested that influences across field boundaries or boundary-crossing activities reduce the commitment to prevailing practices and increase the likelihood for change (Clemens & Cook, 1999; Seo & Creed, 2002;

Boxenbaum & Battilana, 2005; Greenwood & Suddaby, 2006). Our study joins this dialogue and the contribution concerns how extra-field influences affects the awareness, openness and motivation (Greenwood & Suddaby, 2006), which in turn has an explanatory role for the (limited) propensity to act that we observed. While our study partly confirms the results of previous studies, in that extra-field influences can increase the awareness of alternative practices and ideas, our results also show that extra-field influences can decrease the openness and motivation to pursue ideas for change. That is, multiple influences may provide multiple sources of resistance (cf. D'Aunno, Succi & Alexander, 2000; Rao, Morrill, & Zald, 2000). An additional contribution lies in our suggestion of how divergent change can be operationalized and measured in a change initiative (Battilana, Leca, & Boxenbaum, 2009).

An important aspect of our results relates to Scott's (2010) observation that most studies of institutional entrepreneurship are based on after-the-fact accounts of known success-stories. Hence, our case, which depicts an ongoing and less well known process, contributes to theory by adding to the somewhat simplified imagery of boundary crossing as enabling institutional entrepreneurship. Subsequently, we think that it is valuable to relate the paper to the institutional entrepreneurship literature, rather than to frame the case as an example of institutional maintenance (cf. Lawrence & Suddaby, 2006).

It follows that whether different and multiple influences result in change or in resistance rests upon several contingencies. Here, our contribution lies in showing that while extra-field influences add to making a focal actor less susceptible to the influence of dominant logics within a particular field, it does not necessary induce divergent change as these influences may not drive in that particular direction. In short, there is a mechanism but its working is more complicated than first assumed, and while new ideas from one field may stimulate awareness of alternative practices in another field, constraints may also rise from boundary bridging that prevent actors in this field to act on the new ideas and promote divergent change. More consideration needs to be taken to the type of influence, to differences in legitimacy between actors that "carry" influence across field boundaries, as well as to interaction phases and patterns (Dacin, Goodstein, & Scott, 2002; Boxenbaum & Battilana, 2005). Below, four particular aspects are discussed.

First, extra-field influences could either be direct or indirect. That is, influences may cross boundaries in different ways; either through direct interaction or as, e.g., perceptions of what different actors favor. Depending on the context and situation, various effects will arise. If we are to understand the mechanisms that precipitate institutional entrepreneurship, we need further research on influences across boundaries. Here, we may draw a parallel to Greenwood et al. (2011), who discuss the field level mechanisms that "refract" influences from an institutionally complex organizational environment. Our exploration adds to this debate by theorizing such "refraction" as either direct or indirect.

Second, there are differences regarding the perception of legitimacy related to a specific influence. Differences in legitimacy between carriers might enhance the constraining side of extra-field influences and reduce the scope for institutional entrepreneurship. In our study, researchers can be considered such a professional group whose arguments are considered particularly legitimate and hence shape the possibilities for institutional entrepreneurship. This observation is in line with previous research, which has suggested that different professional groups may be carriers of legitimacy and that legitimacy may be granted as a result of their professional status and collective authority (e.g. Deephouse & Suchman, 2008; Meyer & Scott, 1983).

Third, our case indicates that there are different stages within the policy making process where the components awareness, openness and motivation are more salient. This shapes how extra-field influences affect the propensity to act. In the early stages of a process, there might be an abundance of ideas and inclusion of different stakeholders, but influences that occur at later stages may be much less inclusive and are more decisive in determining outcomes.

Fourth, there are combination effects regarding how a focal actor is affected by extra-field influence. Here, our study contributes to the ongoing debate concerning how organizations respond to and are influenced by institutional complexity (Greenwood et al., 2011; Kraatz & Block, 2008). In contrast to prior research, which has considered complexity arising from multiple logics, we discussed the case of a focal actor being exposed to various extra-field influences, a focus which allowed us to explore in some detail the different forces in play. For instance, indirect influences from the MA restricted the scope for radical suggestions to policy by signaling the importance of fiscal discipline, but this could be overridden when researchers supported the initial ideas. Thus, at the micro-level, our focal actor dealt with different types of extra-field influences and effects arose from these combinations. The same type of patterns, i.e., combination effects, could perhaps be observable in other organizational situations where actors deal with diverse groups placing different demands.

Overall, our case presents a somewhat weak outcome in terms of suggestions for divergent change, and one explanation could be related to characteristics of the influencing agents themselves. The activities of researchers may be particularly equipped to reduce the openness to novel or wide-ranging practice changes by systematically increasing the uncertainty attached to such changes, thereby creating resistance against divergent change. At the same time, research increases the knowledge base for acting within familiar practices and well-researched areas. Hence, research field influences might appear to increase the openness towards ideas which are well aligned with prevailing practices. Such ideas are targeted at changing components within an existing production system – aiming at increased efficiency or production of bioenergy – rather than

lending support for radical changes. Changes that can be presented as beneficial in economic terms are also strongly supported by dominant industry actors and thus well entrenched in prevailing logics.

Furthermore, in order to increase flexibility, avoid conflicts with important economic interests and circumvent sensitive issues such as GHG-intensive consumer habits, politicians may be reluctant to set clear (radical) goals. Thus, although the relatively progressive 40% target emanates from politics, such influences could possibly reduce rather than enhance the likeliness of a public agency pursuing divergent change. Our study suggests that political and research influences might impede rather than assist in the quest for divergent change. On the other hand, the original awareness of the climate change issue results from activities within the research community indicating that research also stimulate change. It could also be the case that these observed influences are particular for the type of problem addressed here – reduction of GHG emissions. Engstrom, Finnveden, & Nilsson (2007) found in their study of Swedish agri-environmental policy that biodiversity and pesticide use were the issues receiving far most attention, while other issues, including climate change, were almost neglected. Thus path dependency within the policy process might contribute to keeping certain issues off the agenda.

Concluding remarks

In this paper, we have explored how extra-field influences affect an actor's propensity to suggest and promote divergent change. Elaborating on mechanisms affecting the opportunities and constraints inherent in institutional entrepreneurship, a key contribution is that while extra-field influences may have a beneficial impact on divergent change, we were also able to show how they may constitute multiple sources of resistance. We further describe several of the contingencies influencing whether different and multiple influences result in change or in resistance.

As indicated above, the study has some limitations. It is difficult to assess how awareness, openness and motivation, the components of propensity to act, evolved in the project, as interviews partly were carried out in retrospect. Relying on various written material and cross-checking between respondents' accounts, we tried to reduce these limitations. Further, it is difficult to rely on just one case and a limited number of agents interacting across fields to test the importance of extra-field influences.

Nevertheless, research regarding institutional entrepreneurship is of utmost importance in light of the escalating challenges, such as climate change, that our societies face. Given that substantial global agreements are off the table in the foreseeable future, it seems that changes have to materialize elsewhere, e.g., within industrial sectors. Hence we need a more detailed understanding of the opportunities and constraints involved in institutional entrepreneurship. Our findings suggest that further research is needed on the patterns and roles of

extra-field influences and how they can contribute to, or hinder, necessary change. Here, qualitative case studies can contribute to more insightful theorizing regarding involved mechanisms. The lesson for actors involved, e.g., the MA, points to the importance of setting strict targets to create motivation. Further, actors such as SBA also needs a more strategic approach to the uncertainty that is generated in these types of processes and how it can be handled without reducing the scope for radical changes. Such uncertainty needs to be weighed against the risks involved doing nothing to prevent climate change. Hence, there is a need for what can be labeled epistemological and ontological reflections, i.e., discussions regarding how scientific uncertainty is to be handled in political processes.

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Appendix 1

Table 4 Sources of GHG emissions in Swedish agriculture

Emission source	Description
N ₂ O, a powerful GHG, is emitted from microbial processes occurring in cultivated soils. Excess nitrogen from fertilizing fuel these processes. This type of emissions accounted for 55% of agricultural emissions 2006 (Swedish Board of Agriculture, 2008).	The microbial processes are affected by many local factors such as moist, temperature and type of soils. It is somewhat uncertain how these processes can be affected but decreasing the amount of excess nitrogen, e.g. nitrogen that is not absorbed by the crops is a crucial step.
CH ₄ and N ₂ O emissions from farm yard manure in stables, at storage and at spreading. Manure from ruminant cattle, e.g. cows, typically emits less GHG: s than manure from swine.	The separation between animal husbandry and crop cultivation results in excesses of manure in certain locations. Manure is difficult to transport and storage is a concern for many farmers.
Production of farm inputs mainly synthetic fertilizers and protein fodder (soy).	Fertilizer production is energy intensive and cause N ₂ O leakage, soy production in locations such as Brazil or Indonesia drive deforestation. These inputs are not used by organic farmers.
CH ₄ emissions from ruminant cattle. Accounted for 33% of agricultural emissions 2006 (Swedish Board of Agriculture, 2008).	Ruminants, mainly cows, emit CH ₄ during their digestion.
Organogenic soils emitting CO ₂ and N ₂ O account for the third largest source of agricultural GHG emissions 2006 (Swedish Board of Agriculture, 2008).	Organogenic soils are carbon rich former wet lands and when cultivated the carbon is emitted as CO ₂ . It has been suggested that less intense cultivation may reduce these emissions.